

Joint Mathematical Council of the United Kingdom

Minutes of the meeting held at the Royal Statistical Society on Tuesday 14 June 2016

Present

Officers

Chair	Paul Glaister
Honorary Secretary	Peter Thomas
Honorary Treasurer	Paul Harris

Representatives of Participating Societies

Adults Learning Mathematics	Graham Griffiths (deputy)
Association of Mathematics Education Teachers	Ros Hyde
Association of Teachers of Mathematics	Sue Pope
British Society for Research into Learning Mathematics	Gill Adams (deputy)
British Society for the History of Mathematics	June Barrow-Green
Conference of Heads of Departments of Mathematical Sciences	Jan van den Heuvel (deputy)
Edinburgh Mathematical Society	David Pritchard
Institute of Mathematics and its Applications	Chris Chipperton
London Mathematical Society	Peter Ransom (deputy)
The Mathematical Association	Peter Ransom
Mathematics in Education and Industry	Charlie Stripp
National Association for Numeracy and Mathematics in Colleges	Sally Barton
National Association of Mathematics Advisors	Alice Onion (deputy)
National Numeracy	–
National STEM Learning Centre	Stephen Lyon
NRICH representing the Millennium Mathematics Project	–
Operational Research Society	–
Royal Academy of Engineering	–
Royal Statistical Society	Olivia Varley-Winter (deputy)
United Kingdom Mathematics Trust	Bill Richardson
Wales Institute of Mathematical and Computational Sciences	Sofya Lyakhova

Co-opted Members

Chair of the BCME Committee	David Martin
Immediate Past Chair	–
UK Representative to International Commission on Mathematical Instruction	–

Representatives of Observing Societies

Advisory Committee on Mathematics Education	Robert Barbour
Department for Education [England]	–
Department of Education [Northern Ireland]	Julie Harris
Education Scotland	–
Higher Education Academy	Catherine Hack
National Centre for Excellence in the Teaching of Mathematics	Charlie Stripp (deputy)
National College for Teaching and Leadership	–
Office for Standards in Education	–
The Office of Qualifications and Examinations Regulation	Alison Tonkin (deputy)
The Royal Society	–

Visitors

Advisory Committee on Mathematics Education Secretariat	Niamh Mc Mahon
Department for Education and Skills [Wales]	–
JMC Representative to the National Maths Hubs Forum	Tony Cotton

1 Introduction

- 1.1 **Welcome** The Chair welcomed everyone to the meeting.
- 1.2 **Practical Arrangements** The Honorary Secretary read out the procedure for emergency evacuation as laid down in the contract for the booking of the premises.
- 1.3 **Apologies for absence** Apologies for absence were received from Matt Bulmer (NCTL), Mike Ellicock (National Numeracy), Jeff Evans (ALM), Lorna Harvey (Education Scotland), Catherine Hobbs (HoDoMS), Janet Holloway (Ofqual), Jane Imrie (NCETM), Matt Lewis (NAMA), Ems Lord (NRICH/MMP), David Montagu (The Royal Society), Hilary Povey (BSRLM), Alice Rogers (LMS), Neil Sheldon (RSS), Charlene Timewell (ORS) and Tim Rowland (Immediate Past Chair).

2 Minutes of the meeting held on Tuesday 23 February 2016

2.1 **Approval** The minutes of the meeting held on Tuesday 23 February 2016 were approved.

2.2 Matters arising not elsewhere on the agenda

3.1 Reports from JMC Executive Committee: Chair The Chair said that the open call for new members of ACME was intended to take place around Easter but there had been a delay; he said that Robert Barbour might speak about this later in the meeting.

The Chair also reported that he and others from the JMC and its Participating Societies had met with NCTL. He was working with NCTL to enlarge its CPD guide to include information about the activities of member societies; he had also spoken at some meetings organised by NCTL.

3.2 Reports from JMC Executive Committee: Honorary Secretary The Chair said that the meeting which ACME is convening to further the implementation of its report on initial teacher education has yet to take place.

8 ICME The Chair said that the work of this committee was completed.

3 Reports from JMC Executive Committee

3.1 **Chair** The Chair attended the meeting of the BCME Committee on 9 March 2016.

The Chair spoke at a coordination event for Level 3 mathematics which had involved the Further Mathematics Support Programme, Core Maths Support Programme and Maths Hubs; he felt it had been a very useful event.

The Chair attended a meeting on quantitative skills at the British Academy and another meeting on the same subject at the Royal Geographical Society.

The Chair enlarged upon his earlier remarks about the meeting with NCTL, saying that there would probably be a fresh call in October for material to update NCTL's STEM CPD guide.

The Chair attended two TSST meetings, one a stakeholder event and the other a start-up meeting. He is working with TSST to ensure its operational handbook includes details of JMC, particularly subject associations, and highlighting CPD opportunities.

The Chair spoke at a Westminster Education Forum Event and had been asked by WEF to suggest subjects for future events; he asked Council members to let him know of any suggestions they might have.

The Chair attended the IMA Schools and Further Education Committee on 7 June 2016 to talk about the National Mathematics Subject Committee, although there is little information available as yet about the NMSC.

The Chair then spoke about the Smith Review. Adrian Smith has been asked by the Treasury to review post-16 mathematics and report by 31 December 2016. He is being supported by a team of three civil servants in the DfE (including one from the Treasury). The Chair introduced a call to JMC member societies for input which he said he would circulate after the meeting. He drew attention to the key questions and procedures; the deadline for responses is 6 July 2016; the Chair will collate responses and forward them to the review (he will have a subsequent meeting with the review for clarification); member societies were asked to indicate when making submissions whether they were happy for their submissions to be shared with other member societies.

3.2 **Honorary Secretary** The Honorary Secretary said that he had nothing to add to his written report.

3.3 **Honorary Treasurer** The Honorary Treasurer said that one of the cheques for a bursary for ICME13 had not been presented; he said he had asked Chris Budd to make enquiries but nothing had been forthcoming; he added that eventually the cheque would be out of time.

4 Reports from other committees and working groups

4.1 **BCME Committee** David Martin said that he was very grateful for all the hard work of all the committees. There had been a site visit on 1 June 2016 and the contract for the venue was being formed on the basis of that visit. A Moodle site had been set up for the Reference Group and (three members apart) all the members of the group should have received access instructions. The programme for BCME9 had been revisited; it now included a primary speaker and a plenary session on teachers learning through collaboration. He said that sponsors of BCME8 had been approached for support and he asked for suggestions of other potential sponsors who might be approached.

The Chair thanked David Martin for his report and work as Chair of the BCME Committee.

In response to a question, David Martin said that all the plenary speakers had accepted their invitations. Sue Pope added that the primary plenary speaker, Ruth Merttens, had agreed to speak.

4.2 **ICME Bursaries Committee** There was no report and the Chair said that the work of the Committee was done.

4.3 **GCSE Working Group** The Chair said that the future work of the GCSE Working Group had been discussed in the preceding meeting of the Executive Committee. It had not been clear before the previous meeting of the Council what the next steps could be, but these had been considered in the light of the work done by the Working Group. It was decided to raise concerns from the February Council meeting with the DfE and Ofqual to find out what activity is likely to take place which would address those concerns, in addition separate meetings with DfE and Ofqual would be requested, matters would then be taken forward in the light of the outcomes of those contacts.

Sue Pope said the letters should request clarification of the outcomes desired from the reforms.

The Chair said that once the responses of DfE and Ofqual were known then it could be decided what the Working Group can usefully do to complement their work, for example: a survey of contact time in schools.

The Chair then invited comments. Sue Pope, who convenes the Working Group, also invited comments over lunch. She added that the document that had been circulated previously had provoked some responses which had influenced the thinking of the Working Group.

5 Reports from Participating Societies

5.1 **Association of Mathematics Education Teachers** Ros Hyde updated the Council on recent developments.

Ros Hyde remarked that there had been a great deal of recent media coverage of teacher training: the shortage of time for subject-specific training, and the Public Accounts Committee finding that the government has no plan to address the shortage of teachers.

Ros Hyde then gave the latest information, as of 27 May 2016, on places filled for September 2016 for fee-paying Initial Teacher Education. HEIs are 50% full and the School Direct / SCITT bursary / fee route is 75% full (allocations this year are to sectors). She also identified particular challenges this year: there is the smallest cohort of graduates for some time and the improvement in the economy is improving employment prospects for graduates in competition to entering teaching.

Ros Hyde said that the White Paper raised issues for ITE:

- the proposed establishment of centres of excellence for ITE, with the linking to that of allocations for 2017 and 2018, and a lack of clarity as to purpose and criteria for the centres,
- an increase in school-led routes,
- concerns about the role future role of higher education in ITE (on which UCU has briefed the press),
- Qualified Teacher Status to be replaced by a new system,

She added that at the House of Lords Scrutiny Seminar the previous week, many participants had agreed to campaign against the replacement of the present QTS system (with one where headteachers will award qualified status some year into a teacher's career, a procedure which raises quality assurance concerns).

Robert Barbour spoke to reinforce some of these points. The Public Accounts Committee's recommendations echo those of the ACME ITE report of November 2015, and the Public Accounts Committee's report criticises the lack of data, the lack of an overall plan and experiments to incentivise entry into teaching which had no follow-up and no evaluation. He added that NCTL's reports change format from year-to-year so it is difficult to make comparisons. He noted that recruitment in 2010–11 had been 104% of target and in 2014–15 had been 88% but he was dissatisfied with lack of granularity in the data which did not make it possible to discern any variation by school's Ofsted grading or locality.

Ros Hyde said that at present only primary, physical education and history were not shortage subjects. The Chair said he had attended a TSST meeting chaired by Sinead O'Sullivan (Director of Programme Delivery at NCTL) at which people were telling her that the proportions of teachers not qualified in subject and not qualified at all were rising, but he added that we could not do anything as JMC at present except continue to lobby NCTL through continued dialogue and joint meetings of JMC and NCTL.

Charlie Stripp asked how much noise had been made about the paucity of data. Ros Hyde said that NCTL was working on improving the data. Niamh Mc Mahon said that now it has been said what data

were needed, there should be a national debate on the matter. Ros Hyde said that NCTL has said it is working actively to collect better data, but it will take time. Robert Barbour said this is likely to be in Adrian Smith's Terms of Reference, at least for post-16.

Charlie Stripp asked what evidence there was to defend QTS and whether there was evidence demonstrating better outcomes for pupils where the trainee has been through a university-led route or a school-led route. The Chair said that in the teaching profession there is no clear path to become a fully qualified teacher. Ros Hyde said that until recently nearly all teachers were qualified and had QTS. Charlie Stripp said that for a powerful argument to defend QTS, one needed to show a bad outcome if it was changed; he pressed the need for strong evidence. Sally Barton said that the view of parents if they knew their children were being taught by unqualified teachers might be a deterrent from abolishing QTS. Sue Pope said that in high-performing jurisdictions all teachers are trained and qualified.

Graham Griffiths raised the interface with post-compulsory teacher education which is often not subject-specific. He said this had implications for the Smith Review.

Robert Barbour said that the Public Accounts Committee had accepted that the complexity of ITE arrangements is deterring applications and he asked whether changes to QTS would reduce complexity.

- 5.2 **Edinburgh Mathematical Society** David Pritchard said that education in Scotland was in a transitional stage; the Curriculum for Excellence had now reached the end of secondary. There had been some bedding-down issues with examinations and some assessment issues were ongoing. Previously, overlapping grades for the different levels of Standard Grade had allowed students to be prepared for different levels in the same class, but this was not possible for all National 4 / National 5 subjects (for example, in science different levels have different syllabuses). There also seems to be a shrinking of choice of subjects for students, which was not intended.

David Pritchard continued that the next round of reform is already coming through, the National Improvement Framework; this was consulted on in November 2015 and the final version published in January 2016. It imposes uniform tests across all local authorities; this will result in better data but there is a risk of school league tables. The Government had said that this was not their intention, but it is not clear how it will be prevented. He said that the National Improvement Framework in general seemed unclear beyond broad aspirations.

David Pritchard added that the Edinburgh Mathematical Society was lobbying on these matters through The Royal Society of Edinburgh's Learned Societies Group. He concluded by saying that the Curriculum for Excellence had not been fully evaluated before the next innovation had been introduced.

- 5.3 **The Mathematical Association** Peter Ransom said that the one-day conference mentioned in section 6 of the written report would be called *Inspiring Mechanics Teaching* and be held on 29 October 2016. He expanded on section 8 of the written report, saying that on 11 June 2016 the MA Council had appointed two new Honorary Members but he could not give their names as they had not yet indicated their consent to appointment.
- 5.4 **Mathematics in Education and Industry** Charlie Stripp said that the MEI position paper on the implementation of the new GCSE had been put on the MEI website that morning; he apologised for the link given in the written report not working [the correct link is <http://www.mei.org.uk/files/pdf/GCSE-reform-position-paper-final.pdf>]. He reported an LMS email saying that the Smith Review should also include the Further Mathematics Support Programme as there were also concerns over AS and A Level Further Mathematics. He said that up to 40% of schools have stopped offering AS Levels which was dangerous for AS Mathematics and AS Further Mathematics.
- 5.5 **National Association of Mathematics Advisers** Alice Onion said that a NAMA Annual Conference would be held at the National STEM Learning Centre from 2 to 4 March 2017 and in subsequent years would move around the country. The main activities of NAMA at present are: to sustain and improve networks of professional development providers, and to work with Maths Hubs (although this collaboration varies in effectiveness across the nine regions). NAMA would like to see the National Maths Hubs Forum, which meets three times a year, include in its meetings sessions providing professional development for professional development providers; NAMA is attempting to achieve this but it is difficult to find space in the programme alongside national priorities.

Alice Onion corrected the written report, saying Yorkshire and the Humber CPD Providers' Network Meeting scheduled for 16 June has been delayed until the autumn term and would be in Halifax.

Alice Onion drew attention to the NAMA document *Five Myths of Mastery in Mathematics* which was now publicly available and said that an improved version had been published in *Mathematics Teaching*.

Alice Onion also said that NAMA is working with Bowland Maths to update some of its materials, and NAMA would welcome input on what work needs to be done.

- 5.6 **National STEM Learning Centre** Stephen Lyon said that talks are progressing on STEM Learning (which runs the National STEM Learning Centre) and STEMNET becoming one on 1 August 2016.

Stephen Lyon said he was being asked to do more work with science teachers because of the growing amount of mathematics in science GCSEs and A Levels; most of the work on this is being done by science teachers rather than mathematics teachers and there are concerns about learners receiving inconsistent messages from different teachers; he was trying to get mathematics and science departments to talk to each other. The Chair said he was unaware of such encouragement. Stephen Lyon said there was anecdotal evidence of competition between mathematics and science departments in some places.

Sue Pope draw attention to the publication by ASE in 2016 of *The Language of Mathematics in Science* (<http://www.ase.org.uk/resources/math-in-science/>); she said that it contains a lot of good materials, including discussion of the thorny issues of disagreement between practices in mathematics and science. Stephen Lyon said there is a second publication on mathematics in science imminent from ASE, it will include teaching approaches. Sue Pope said that the new qualifications have more emphasis on mathematics and it was appropriate to rethink numeracy across the curriculum.

Stephen Lyon drew attention to the growing number of sixth form colleges where you could only take A Level Physics if you were taking A Level Mathematics.

- 5.7 **NRICH representing the Millennium Mathematics Project** The report was noted.

- 5.8 **United Kingdom Mathematics Trust** Bill Richardson drew attention to the UKMT yearbooks which had been distributed at the meeting.

6 Reports from Observing Societies

- 6.1 **Advisory Committee on Mathematics Education** Robert Barbour said that Philip England had stepped down as ACME Chair because of ill health and that Alex Halliday was standing in and had attended the JMC Executive Committee meeting earlier that day; Philip England's illness had complicated and delayed the Open Call which is now being reorganised; three members of ACME due to leave this summer have been asked to carry on to tide ACME over. Robert Barbour highlighted some milestones: the ITE report published in November 2015 about which ACME will be having a range of stakeholder events, the report on the assessment of problem-solving to be published later this month, ACME's work on Early Years where a diverse community had been convened which has led to improved understanding and cooperation, and the expert panel working on the professional development learning journey of mathematics teachers had received over two hundred responses and was now assimilating the information.

Graham Griffiths questioned the use of the word 'maths' instead of 'mathematics' in the ACME report; Sue Pope supported the use of 'mathematics' rather than 'maths'.

Alice Onion asked if ACME intended to develop a Snapshot on attitudes. Robert Barbour responded that it was on the job list but there had been a bit of a hiatus.

Robert Barbour emphasised that ACME had a very productive year. The Chair commended ACME on what it had achieved in difficult circumstances.

- 6.2 **National Centre for Excellence in the Teaching of Mathematics** Charlie Stripp invited comments on NCETM's written report. Sue Pope asked about the pre-tender call for expressions of interest that the DfE had issued for a National Mathematics Education Centre. The Chair said that nothing had been announced because of purdah. Charlie Stripp said that he had repeatedly been told an announcement was imminent but it had yet to take place; he added that the supplier engagement event had been cancelled and the tender document had not been issued.

7 Reports from meetings

- 7.1 **ACME: Professional Learning Journey Round Table, 18 March 2016** Sue Pope invited questions on her written report; there were none.

- 7.2 **Council for Subject Associations: AGM, 18 April 2016** Ros Hyde expressed surprise that no written report had been circulated. The Honorary Secretary responded that the report received from Alison Clark-Wilson had been addressed to the Executive Committee and not the Council; Ros Hyde said

she would discuss this with Alison Clark-Wilson. Ros Hyde then spoke about the CfSA AGM, there had been a talk by an MP and James O' Donoghue from the DfE spoke about the white paper and how positive it was for the higher education sector.

David Martin asked whether CfSA was an effective place for mathematics and science to meet. Ros Hyde said that this was not so much the case as she had hoped. The Chair urged that it should happen more.

- 7.3 **National College for Teaching and Leadership, 15 April 2016** The Chair reported that the concerns and topics for discussion had been raised in advance; he hoped it was the start of a more fruitful relation with NCTL and TSST. There would be a further meeting in September. The Chair invited questions, but there were none.

- 7.4 **National Maths Hubs Forum, 23 – 24 February 2016** The Chair welcomed and introduced Tony Cotton, JMC Representative to the National Maths Hubs Forum. The Chair hoped Tony Cotton would be able to get a fuller picture of the JMC which would enable him to be a more active participant in the Forum rather than an observer.

Alice Onion said that the role of the JMC Representative to the Forum was very important as the government has decided on a school-led professional development system. She asked how we could ensure that leads to the professionalization of teachers, and said that the government assumes that adult learning is the same as children's learning, but good professional development needs different skills from those of a good teacher.

Charlie Stripp said that NCETM had pushed for engagement of Hubs with subject associations, but it does not manage the Hubs but supports them. The Chair said the Hubs cannot be forced to engage. Tony Cotton said that it was clear that the Hubs were looking for support but were not clear where to find it. Charlie Stripp said that many teachers did not know about the subject associations. Alice Onion said that the associations involved in MMSA have a joint leaflet on promoting membership. The Chair drew attention to the Chartered Mathematics Teacher designation. The Honorary Secretary suggested that member societies should send Tony Cotton information on what they can offer and who to contact; this was agreed as an action from the meeting. Sally Barton asked if societies can advertise bespoke support for schools on the NCETM website; Charlie Stripp said they could. Sue Pope added that ATM had written to the Hubs but there had been a limited response.

Charlie Stripp said that each year Hubs have to produce an action plan for the coming year, including the work groups planned for the year, the JMC should look to how it could contribute to present and future action plans.

Sue Pope said that it would be helpful to encourage engagement of Hubs with HEIs and post-graduate study. Ros Hyde said that engagement between Hubs and HEIs was very variable and she would like to see exemplification of good practice. Sue Pope said that a recent report from the Sutton Trust (<http://www.suttontrust.com/wp-content/uploads/2013/02/Postgraduate-Premium-Report.pdf>) stated that there is a salary premium of more than £5000 a year associated with post-graduate study.

- 7.5 **OCR: Mathematics Consultative Forum, 19 April 2016** David Martin said that representatives and officers had been sent full notes and presentations from the meeting.

Charlie Stripp said that draft specifications and sample assessment materials for the new AS and A Levels were published on 9 June 2016. He was concerned whether the principles from the work of ALCAB had been addressed and if they had not then the sooner a noise was made the better. The Chair added he had collated 120 Mb of material and could make it available through Dropbox.

8 Election of Honorary Secretary

(At the request of the Chair, the Honorary Secretary withdrew from the meeting for this item of business. The minute below was written by the Honorary Treasurer.)

The Returning Officer for this election (Paul Harris, Hon Treasurer) reported that he had received one nomination for the position of Honorary Secretary, namely Mr Peter Thomas. Peter had the support of four participating societies and had indicated that he was willing to stand for election. In the absence of any other nominations, the Returning Officer reported that Peter Thomas was duly elected unopposed as Honorary Secretary for a three year period from the AGM in November.

9 Discussion: Pedagogy for Secondary Mathematics Teaching

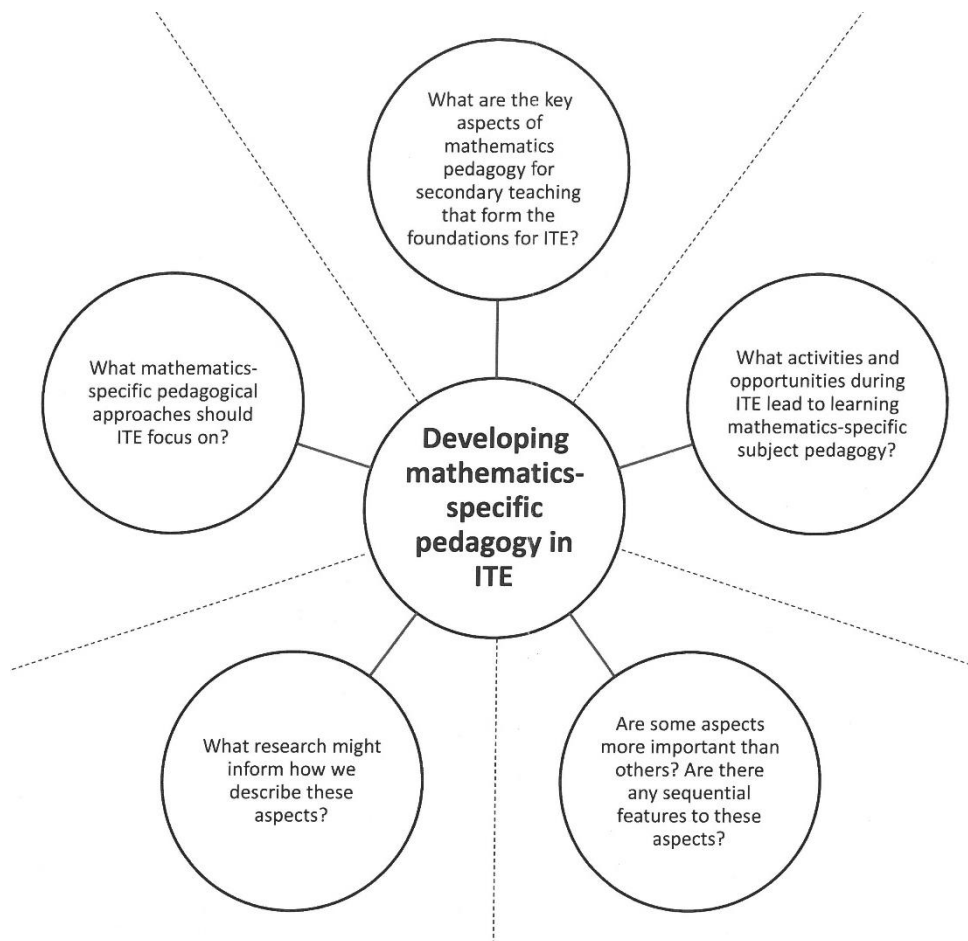
Ros Hyde led the discussion on pedagogy for secondary mathematics teaching; she apologised that Alison Clark-Wilson (JMC representative to CfSA) was not able to be present.

Ros Hyde said the context for the discussion, at least as far as England was concerned, was the continued move to school-led ITE, changes in the awarding of QTS and that the core framework for

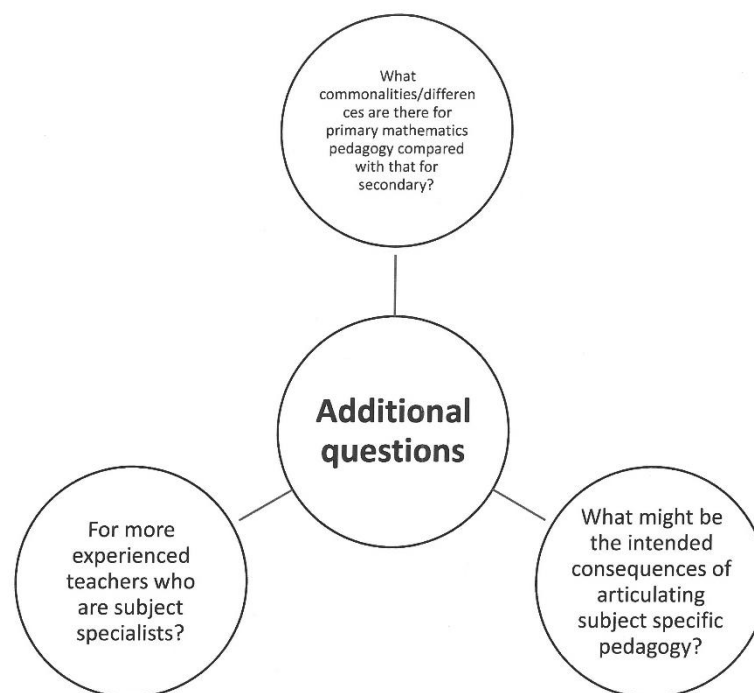
initial teacher training was to be published shortly. The changes had implications. They challenged the role of HEIs as gatekeepers and moderators of standards (in the past HEIs had controlled most of the flow into teaching). The government has promoted localisation of provision of ITE which has the potential for increased variability in selection, content and standards (schools are looking for individuals that fit a particular school whilst HEIs are looking for someone who can fit anywhere). There is an increased variation in the content of programmes, including the balance between generic and subject-specific provision.

Ros Hyde continued, saying that the 2016 education white paper referred to ‘advanced subject knowledge and pedagogy that is rooted in up-to-date evidence’. She asked who might articulate this, particularly in a subject-specific context. (Small providers, of which there are now many, are likely to tend towards generic delivery.) Ros Hyde asked what do we, as representatives of the mathematics community, believe should be included in terms of subject-specific mathematics pedagogy in ITE. She said that the Geographical Association was working on a document on subject-specific pedagogy for geography.

Those present were asked to explore in small groups the five questions below; they were also asked to consider what form any resulting statement on mathematics pedagogy might take.



The following questions were also offered for those who felt they had exhausted the initial questions. (These additional questions were not mentioned in the plenary discussion.)



There followed a period of discussion in small groups which was followed by a plenary session.

Referring to the first figure, Robert Barbour said that the key was the top bubble; he then listed several aspects including: ways of reasoning and proving, the big ideas – the architecture of mathematics, mathematical modelling, reasoning and proof, history, generalisation, prediction, pattern, creativity and mathematics as social action.

Peter Ransom then spoke, referring to the lower right bubble, he said too much is based on preparing for examinations, students are not learning mathematics, there should be opportunities to see mathematics as a joined-up subject.

Alice Onion said her comments related mainly to the top bubble, she listed problem-solving and the place of theory (including cognition and social psychology) in pedagogic knowledge, and said that theorists can help explain why things go wrong.

Sue Pope stressed the importance, for beginning and practising teachers, of working on mathematics together, and reflecting on the experience. She said that there was a need to build a professional identity: within a supportive network, through the subject associations and by a commitment to continuing professional development. She called for a social constructivist approach that was mathematics specific and looked at the why as well as the how. Sue Pope asked how assessment differs in mathematics. She also emphasised the importance of struggle, of getting stuck, and of building confidence and resilience. Teachers needed to be clear what it is they are trying to teach and to select appropriate tasks; teachers had to know where learners are.

Robert Barbour said that linking professional knowledge to subject knowledge was critical, practice is built on professional knowledge, this is at risk with the fragmentation of provision but it can be fostered by professional learning, for example through lesson study.

Chris Chipperton said that the fragmentation in ITE is mirrored in the school system with academy chains instead of local authorities, in consequence people are working more in isolation.

Sue Pope said there was a renaissance of mathematics across the curriculum and in wider society.

Peter Ransom said that the standard of learners' explanation and reasoning was important, often learners were more capable of verbal reasoning than written reasoning and there was too much of a rush from verbal to written reasoning; secondary could learn from primary in this respect.

Sally Barton said that there was often a need for creativity in problem-solving, learners and teachers needed to be open to alternatives; teachers needed to be open to alternative approaches in their teaching.

Sue Pope said that many beginning teachers had had an instrumental experience of mathematics learning, ITE must offer a different way of being mathematical.

Alice Onion (referring to the lower right bubble) said there was a need to develop a better sense of what is essential and a sequence for introducing it. She added (referring to the upper right bubble) that those learning to teach mathematics needed to think about and discuss their prior experience and to develop an openness.

Ros Hyde asked what the JMC should do next.

Robert Barbour said there was a piece of work to be done, there needed to be a subject-specific approach to mathematics pedagogy: there was a need to convince politicians of this and a document in the style of an ACME Snapshot was a possible way forward, there was also a need to challenge the two hundred providers of ITE to provide that mathematics-specific content. The Chair said he would support such a move, not telling providers how to make provision but saying what needed to be addressed. David Martin said that, with the move to school-based delivery of ITE, this was particularly necessary.

Ros Hyde asked those present to send her any further thoughts and she said that she and Alison Cark-Wilson would collate and circulate what had been said. It was suggested that a first output could be an ACME-style Snapshot for heads of Teaching Schools, Maths Hubs and others, then a longer version having alerted leaders with the initial high-level document.

The Chair thanked Ros Hyde for leading the discussion and all who had taken part in it.

10 Any other business not elsewhere on the agenda

None.

11 Conclusion

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

12 Dates of future meetings

Tuesday 8 November 2016

Tuesday 28 February 2017

Friday 9 June 2017

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

Summary Minutes of the Executive Committee meeting held at the Royal Statistical Society on Tuesday 14 June 2016

Present Paul Glaister (Chair), Peter Thomas (Honorary Secretary), Paul Harris (Honorary Treasurer), Sally Barton, Ros Hyde and Sue Pope, also for 6.1 (which was taken at the beginning of the meeting) Robert Barbour (ACME member and its representative at JMC), Alex Halliday (Interim Chair of ACME) and Niamh Mc Mahon (Head of the ACME Secretariat).

Apology for Absence Hilary Povey

1 Previous Business

1.1 **Previous Meeting** The minutes of the previous meeting were approved.

1.2 Decisions since the previous meeting

1.2.1 **Amendment to the BCME9 Timeline** (*confirmed by the Chair 2 May 2016*) The Completion Date for the Key Milestone 'BCME research papers and other resources to be distributed to delegates [at the conference]' was, at the request of the BCME Committee, amended from 'February 2018' to 'March 2018' on the ground, given by the BCME Committee, that 'an alternative approach' would be used 'such as a download from an area of the website, not requiring the lead time for production of memory sticks'.

1.3 **Actions** The action points from the previous meeting were reviewed.

1.4 **Matters arising not elsewhere on the agenda** None.

2 Committees

2.1 **BCME Committee** The report from the Chair of the BCME Committee was considered and the progress in preparations for BCME9 was noted.

2.2 **ICME Bursaries Committee** It was noted that this committee had completed its work.

- 2.3 **GCSE Working Group** The GCSE Working Group had identified several issues which it might address and sought guidance as to how it should proceed. It was agreed to approach DfE and Ofqual to find out what monitoring of the reforms they had in place so there was not a duplication of activity. The future direction of the Working Group would be determined in the light of the responses received.
- 2.4 **Proposed ITE Working Group** It was agreed that a Working Group would not be established but that two initiatives would be undertaken. Following the discussion at the following Council meeting, an attempt would be made to produce a position paper on subject-specific pedagogy for mathematics. The value of the meeting with NCTL on 15 April 2016 was recognised and an attempt would be made to organise a second meeting, this time concentrating on the needs of the primary sector.

3 Charitable Incorporated Organisation

- 3.1 **Registration** The Honorary Secretary reminded the Executive Committee of the steps still to be taken.
- 3.2 **Bye Laws** It was noted that there would be an opportunity to amend and add to the Bye Laws when they were put before the first General Meeting of the CIO.
- 3.3 **Winding up the unincorporated society and transferring its assets to the CIO** The Honorary Treasurer said that new bank accounts would be needed for the CIO and they could not be opened until the CIO was established. In the meantime, the Honorary Treasurer will explore possible bankers for the CIO (both for the central accounts and for the BCME Committee accounts). Only once the CIO is functioning, will the unincorporated society be wound up.
- 3.4 **Trustee Eligibility Declaration** Executive Committee members, as initial trustees of the CIO, were asked to complete and return the Trustee Eligibility Declaration form.

4 Future Business

- 4.1 **Dates of future meetings** It was noted that meetings of the Executive Committee and the Council are to be held on Tuesday 8 November 2016 and Tuesday 28 February 2017. It was agreed that the summer term meeting in 2017 should be held on Thursday 8 June 2017 but, as the usual venue was not available on that date, the date was changed after the meeting to Friday 9 June 2017.
- 4.2 **Future presentations and discussions at Council meetings** Invitations were agreed [and have since been accepted] for the Council meetings on 8 November 2016 (ACME on a topic to be decided) and 28 February 2017 (Sue Gifford on Mathematics Education in the Early Years).

5 Any other business not elsewhere on the agenda

It was agreed that Tim Rowland should cease to be an authorised signature for the JMC's bank accounts and that Paul Glaister should become an authorised signature for the JMC's bank accounts.

6 ACME and the National Mathematics Subject Committee

- 6.1 **ACME Annual Report** A draft of ACME's Annual Report and ACME's priorities for 2016 were discussed with representatives of ACME.
- 6.2 **National Mathematics Subject Committee** It was agreed to continue to monitor the situation.