

## **BRANCH CONFERENCE BURSARY RECIPIENT 2017**

### **Report on the 2017 MA CONFERENCE**

I was delighted to hear that I had received the branches bursary to attend this year's MA conference at Royal Holloway. I had previously attended a handful of other MA events, and had found them helpful in providing ideas for my teaching. Having taken on a new role in my school as Guided Maths Leader, I was keen to look for ideas across the primary age range that I could bring back to school to share with my colleagues. The opportunity to share and discuss successes and challenges in mathematics teaching with teachers from different settings also appealed to me.

After negotiating my way around Royal Holloway's picturesque campus to find my accommodation, I made my way to dinner, to meet some of the other attendees. I was sat next to Jennie Golding, and we discussed some of her work at the Institute of Education, and how some of those themes related to my experience in primary schools. It was also interesting to talk to another primary school teacher at my table about the recent challenges with the curriculum changes, and preparing children for SATs tests at a standard much higher than those previously.

The first evening concluded with a quiz, in which I teamed up with two others to valiantly battle to last place (we did have the smallest team in the quiz!). There were some particularly interesting questions in the 'Marathon rounds' which offered some challenging mathematical questions, as well as some creative film questions.

Saturday morning commenced with Debbie Morgan's opening plenary on mastery in primary mathematics, which was of particular interest for me. She drew on some of the principles of the Shanghai methods, including using repetition (though not in the traditional rote sense) to embed the understanding of certain similarities between calculations. She contrasted this with the use of variation to demonstrate the flexibility and universality of mathematics. This she illustrated by representing fractions in a range of ways, and asking us to consider the broad subject knowledge needed by teachers when introducing fractions to ensure children are exposed to a full range of fraction contexts.

After this, we separated for our first sessions. I had chosen Robert Barbour's session 'recruiting, retaining and supporting mathematics teachers', as I was interested in how the worsening nationwide crisis in numbers of mathematics teachers had been caused and what the future held. As a small group, we discussed the issues we had seen in terms of decreasing numbers of mathematics teachers and, in some cases, the worrying trends of secondary schools being forced to hire teachers without sufficient mathematical qualifications in order to give each class a teacher. However, despite the recent issues, there were some reasons for hope: teaching mathematics still gives teachers a very high level of satisfaction, and maths hubs are leading regional professional development to up-skill the workforce to help overcome the challenges.

Before the second session, we had the chance to browse the publishers' stands outside the seminar rooms. I found the junior maths challenge materials intriguing, and I took some copies of past papers to challenge some of the highest attaining pupils in my class.

My second session was run by Chris Budd, looking at using climate change to motivate teaching. Though he had a secondary focus for his session, many of his points could be easily translated to primary mathematics. Chris demonstrated the importance of wider context and data when looking for trends, and the different ways in which data can be used (and abused) to support a point of view. In a topic of such great importance, a critical approach to the statistics is vital, and teaching statistics through this lens offers many opportunities to develop critical thinking in students.

Following lunch – and a look through the maths puzzles dotted around the building – I went to Sue Gifford's session on the use of manipulatives with 3-9 year olds. Sue first presented her four Cs in relation to the use of manipulatives: counting, cardinality, comparison and composition. Among the many findings from her recent research, I was struck by the focus on the purpose of manipulatives and when they are used; there was a significant trend towards their use for lower-attaining pupils, though she questioned whether teachers were making conscious choices between types of manipulatives. This is something I believe I can implement in my own practice, as it is important to ensure that children correctly understand the way in which certain manipulatives are used. Similarly, she proposed that using manipulatives with higher- and middle-attaining pupils should also be encouraged, when appropriate, as a means of further exploring the connections between numbers.

Bringing maths teaching into the 21<sup>st</sup> century, run by Pietro Tozzi, was one of my favourite sessions at the conference. As a relatively recent entrant into teaching, I have experimented and trialled a range of strategies in my classroom to maximise learning potential. He had some great ideas for increasing the independence of students, including the use of ICT, and peer-support groups that empower children to take control of their own learning. While asking children to write their own maths questions is something I have done previously, I liked his extension to this: he asks the children to give multiple choice answers, with the aim of tricking their friends with designed incorrect answers.

After the main sessions on Saturday, we were treated to a short tour of the Picture Gallery at Royal Holloway, where there were a number of interesting and impressive paintings. Saturday evening's entertainment, provided by Ben Sparks and David Acheson, was a light-hearted reminder of the links between mathematics and the real world, as they discussed their experience in maths and music together.

Sunday morning opened with Jennie Golding's President's Address, in which she considered the difference between mathematics and *school* mathematics. She probed the affective resources required for learning in mathematics that she feels are not emphasised enough in education at the moment, though I do feel primary schools are becoming increasingly aware of the importance of this thanks to the work of other academics like Jo Boaler. The most important message I got from her talk was the reminder that often the best mathematics is done for the sake of doing mathematics, just as a 'nice thing' to do. I think ensuring that mathematics is viewed by students as something that is both interesting and challenging is one of the most important jobs of mathematics teachers across all stages of education.

After this, I attended Lucy Rycroft-Smith's session on board games in the classroom. Although I was slightly disappointed to find that her focus was not the classic board games I had always enjoyed as a child, she introduced us to a range of contemporary board and card games that draw on a range of topics, including the group's favourite – Timeline – which drew a number of 'I really should know this' comments from the group.

For session six, I ventured to Chris Sangwin's exploration of pendula and their importance throughout mathematical history. Having not done any degree-level maths for a few years, I was only able to vaguely follow from halfway through his talk, but it was fascinating to see how pendula could vary so much, and act in such a variety of ways.

The final small session was Cherri Moseley's on developing number sense at primary level. We looked in detail at the different components of numbers sense and examined the cross-over between number sense and numerical fluency. Despite already doing extensive work on place value, it convinced me there is yet more to do (certainly in terms of depth) in my classroom.

The conference closed with Rob Eastaway discussing creative problem solving. While many of the problems posed felt better-suited to secondary pupils, the mindsets for solving these problems could definitely be applied to problems at primary level. Lateral thinking and looking at extremes in order to test the limits of problems are techniques that should absolutely be developed from an early age to solve problems.

Overall, I am really grateful to have had the opportunity to attend the annual conference this year. I noticed that there were not great numbers of young teachers, and I think anything that could be done to encourage more to attend in the future would be beneficial for the Association, and would add further breadth to the conference.

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