



Autumn 2015

## Centre for Research in Mathematics Education

### Newsletter No. 6

#### In this issue...

Teaching  
Mathematical  
Modelling

Visitor from  
Italy

Educational  
Designer

CRME Seminar  
Programme

#### Links

[CRME website](#)

[Upcoming  
seminars](#)

#### Welcome

In this newsletter we have three teachers' perspectives on the highly successful *Teaching Mathematical Modelling* conference that was held here in July. We hold many interesting events, such as the CRME seminars, which everyone is very welcome to attend – for details please see below. We also have a plug for the online open-access journal *Educational Designer*, for which the Centre's Sheila Evans is the assistant editor. There are lots of classroom-relevant features and ideas – do take a look!

If you have suggestions of items for inclusion in future newsletters, please email me. I would be delighted to hear from you.

**Colin Foster** [colin.foster@nottingham.ac.uk](mailto:colin.foster@nottingham.ac.uk)

**Editor**

---

## Teaching Mathematical Modelling

In July, The University of Nottingham held the Conference for the International Community of Teachers of Mathematical Modelling and Applications (ICTMA). It brought together approximately 150 researchers in education from across the world, resulting in over 100 presentations of their work. Local teachers who had contributed to this research were invited to participate. Below are the comments of three.

**Nicola Mullins, Head of Mathematics and TAG SCITT Mathematics Lead, writes:**

*This was a fabulous day when I had the time to reflect on developments in*

*the learning of mathematics and talk with people who are passionate about our subject. In particular, the chance to see the next steps in Sheila Evans' project 'Developing Students' Capacity to Critically Assess Mathematical Ideas', which my school, Nottingham University Samworth Academy, has had an involvement with and are using the project's resources to get to grips with the new Core Maths qualification. Geoff Wake and Malcolm Swan, as always, were a delight to observe and listen to. Their depth of knowledge is extensive and certainly inspired me to take a fresh look at the teaching of mathematics in my department. The conference also helped me recognise the need for the excellent work undertaken at the University to be disseminated more widely to our local community of teachers. Particularly as we teachers are beginning to have the jitters about the 2017 GCSE exam!*

**Dominic Hudson, Head of Mathematics, Heanor Gate Science College, writes:**

*I was fortunate enough to attend the event at Nottingham with two other colleagues who work as teachers of mathematics. The event came at the end of a very long and gruelling academic year, yet all of us commented on how energising it was to attend an event where the sole purpose was to improve and develop students' learning of mathematics. Too often, courses attended by teachers are spent on tactics and tricks regarding how best to play within the current system to maximise students' examination results. This event was primarily concerned with student learning and ensuring their diets are varied and prepare them for both examinations and life beyond compulsory education.*

*It was also refreshing to hear that many of the issues facing a teacher of mathematics in the UK are not unique and are apparent from all over the world. One of the other teachers that attended the day was quoted as saying "every maths teacher should go and attend this event." When pushed on why, she said it really made her think and question her everyday practice.*

**Nick Wilson, Teacher of Mathematics, White Hills Park Federation, writes:**

*I have been involved in a research project working closely with Sheila Evans, from CRME. This has involved me trialling Mathematics Assessment Project lessons. We have been interested in the way students use the "sample student responses" in unstructured problems. We have particularly focused on the way that students compare and contrast the different methods.*

*Sheila offered me the chance to share this work by jointly leading a session at the ICTMA Conference with her. This allowed Sheila to talk about the research and theory behind the task designs whilst I could provide insight into the way these resources are used in practice: what really happens in the classroom. We had a very varied audience, from international researchers to UK-based teachers. It seemed that the talk was well received, and it was*

*great to be challenged by the questions at the end. Most of the time, my conversations about work are a moan in the staffroom at lunchtime, so I really appreciated the opportunity to talk to other people about teaching, and to hear their ideas for the future.*

**Geoff Wake, who works in CRME and who organised and chaired the conference, writes...**

It is really good to hear from teacher colleagues on how much they enjoyed their day at the ICTMA conference. This is held every two years at a venue around the world – in 2013 it was in Brazil and the next conference in 2017 will be held in South Africa. In the main the conference provides an opportunity for researchers to meet and discuss their work, but at recent ICTMAs there have been opportunities for teachers to be involved. It's clear that in Nottingham this gave local teachers an opportunity to present their views of the research projects they have been involved with through CRME as well as find out about similar activity going on across the world. If you are looking for other opportunities like this to stimulate your teaching, you might consider attending the International Congress of Mathematics Education (ICME), which is to be held just across the North Sea in Hamburg next Summer (see [www.icme13.org](http://www.icme13.org)). This is the world's largest mathematics education conference, held every four years, with all manner of interesting presentations and working groups as well as resources displayed from across the world. It is possible that the London Mathematical Society will provide bursaries to help teachers attend as it has in the past – watch out for more details!

---

### **Visitor from Italy**

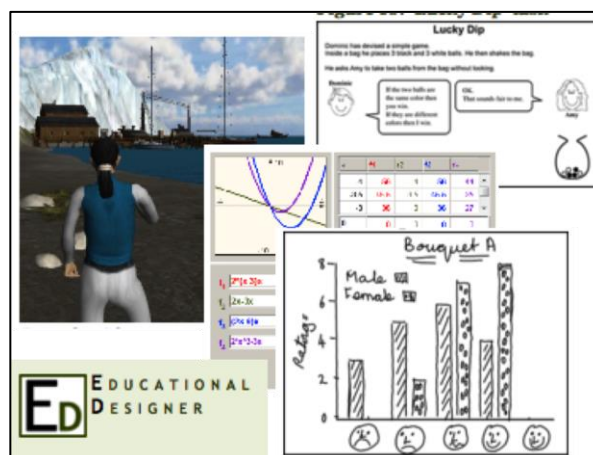
My name is Simona Linnenbrink. I am a mathematics student at Turin University in Italy. Last year I was involved in the project "Homework School" in Turin, a balance between sessions with low achievers of Year 8 and sessions in designing technological tasks, technological self-assessment tasks and tutoring online.

My supervisors Dr Malcolm Swan and Dr Diane Dalby have given me the great opportunity to write up my thesis at The University of Nottingham. My masters research thesis focuses on formative assessment in the mathematics classroom and the potential role and limits of new technologies therein. I have taken part in the FASMED project in Italy, where I designed future activities with the Italian teachers and I observed some lessons. Now I am analysing both Italian lessons and English lessons within a formative assessment perspective. Furthermore, I am interested in argumentation processes related to early understanding of functions and graphs.

---

## Educational Designer: The Journal

The International Society for the Design and Development in Education (ISDDE) was formed by members of CRME ten years ago. The goals of the society are to improve the design and development of educational tools and processes; increase the impact of good design on educational practice; and build a design community that will forward these goals. To support these ambitions the society publishes its own e-journal, *Educational Designer*. A number of colleagues from CRME have taken on the role as editor of the journal, and now it is my turn. So here is a brief sales pitch as to why you should read and contribute to it.



Firstly, it is online, free and straightforward to access. Secondly, colleagues at CRME regularly contribute to it (see Colin Foster's article in the latest issue). This means you can read about innovations that may be familiar to you: for example, student tasks or professional development materials used in local schools. Teachers and researchers can discover within the articles the designers' intentions when creating these resources, the details of which can be challenging at times to communicate to 'us locals' within our busy days! Another plus concerns the rich exemplification in all the articles. When I read papers in other journals concerning innovative designs I am sometimes left wanting to know more about the specific details of the design. This is not the case with papers in *Educational Designer*; each paper is full of examples, allowing you to get to grips, in a very concrete way, with the thinking behind the resources.

You can find the latest issue at:

[www.educationaldesigner.org/ed/volume2/issue8/](http://www.educationaldesigner.org/ed/volume2/issue8/)

**Sheila Evans**

---

## CRME seminars

The next CRME seminar is:

- 3.30pm Tuesday 8 December 2015 (*please note that the start time is an hour earlier than usual*), A35 Dearing  
A cognitive science perspective on learning with visual and multiple representations: Implications for STEM education  
Shaaron Ainsworth, LSRI, University of Nottingham

We would love to see as many people as possible. If you are not receiving notifications of these events, and would like to be, please get in touch with Anne Floyde at [anne.floyde@nottingham.ac.uk](mailto:anne.floyde@nottingham.ac.uk)

## **Colin Foster**

If you have any comments regarding this newsletter, or would like to be added to or removed from our mailing list, please contact [anne.floyde@nottingham.ac.uk](mailto:anne.floyde@nottingham.ac.uk). Previous newsletters can be found at [www.nottingham.ac.uk/education/research/crme/news-and-events](http://www.nottingham.ac.uk/education/research/crme/news-and-events). The editor is Colin Foster.