

Meet Julian Marshall, our FaSMEd Film contractor ...

Julian Marshall (MLM Learning Design) will be working with the FaSMEd project team to capture key moments of the project on video.

With the footage that is recorded Julian, working closely with the team at Newcastle University, plans to produce an overview video and a series of shorter video sequences that can be used to support Professional Development (PD) sessions.

Julian intends to capture material using a range of methods; from full professional crews, reportage, and in some cases including material captured by the participants themselves.

The team hope that the resulting videos will promote the project mission, outcomes and legacy, and provide an overarching description of the project process. We also hope to share the work of the project participants to convey the collaborative nature of the project across the different partners.

Julian has worked closely with teachers in mathematics and science over many years to develop the use of video both in the classroom and for PD. During this time he has been fortunate to work with the Shell/MARS team at the University of

Nottingham and others exploring formative assessment. Previously Julian was the education officer for science at BBC Education.

Julian will be attending the FaSMEd conference in Lyon with his camera in April. He is looking forward to meeting more project partners and exploring possibilities of getting video evidence from participants across the project.

Thank you to the teachers at George Stephenson High School already, for accommodating Julian and others to film during their project activities.

Here is a picture of Julian (third from right!) and crew taken during a recent project for The National Archives to produce an enquiry based resource for schools based on the Magna Carta.



For further information please see: <http://research.ncl.ac.uk/fasmed>
Our Facebook page: <https://www.facebook.com/fasmedproject>
Or email: fasmed@ncl.ac.uk

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FaSMEd NEWSLETTER

Issue 5

31st March 2015

Welcome to our fifth issue of the FaSMEd newsletter. This issue includes news and updates from across the project, with a particular focus on our Nottingham, UK, partner.

This issue was produced by Newcastle University, UK, and University of Nottingham, UK.

FaSMEd Stakeholder meetings

FaSMEd partners have held this year's annual stakeholder meetings local to their own contexts inviting school leaders, teachers, policy makers, educational consultants, researchers and others. These meetings have provided opportunities to disseminate progress about the FaSMEd project, as well as creating spaces for those teachers involved in the project to share experiences and reflections about the research so far.



Congratulations to FaSMEd partner Malcolm Swan, University of Nottingham

The International Commission on Mathematical Instruction (ICMI) has announced the first recipients of the Emma Castelnuovo Award for Excellence in the Practice of Mathematics Education will be Hugh Burkhardt and Malcolm Swan from University of Nottingham, UK, in recognition of more than 35 years of development and implementation of innovative, influential work in the practice of mathematics education.

FaSMEd represented at Conferences across Europe and South Africa

Partners from across the FaSMEd project continue to present initial findings at conferences and workshops.

Hana Ruchniewicz represented FaSMEd at the 49th annual conference of the **Society of Didactics of Mathematics (Gesellschaft für Didaktik der Mathematik, GDM)** in Basel, Switzerland, February 2015. She gave a talk on her dissertation project explaining FaSMEd's aims and the develop-

ment of classroom materials for self-assessment in the field of functions using a design research approach. The presentation ended with a case study of one student's work with the material showing that individual learning paths are possible within the developed self-assessment cards.

Majella Dempsey and David Wright presented at a **workshop on assessment in science and mathematics at secondary level** at Dublin City University, February 2015. The aim of the workshop was to share and discuss different approaches, frameworks, materials and examples for how to assess science and mathematics at the secondary level. There was a diverse range of attendees including policy makers, education officers, researchers and research students. Majella and David presented initial findings from the FaSMEd project, alongside other research projects represented including:

- Project Maths, National Council for Curriculum and Assessment (Republic of Ireland (RoI)
- Senior Cycle Science, National Council for Curriculum and Assessment (RoI)
- ASSIST-ME - Assess Inquiry in Science, Technology and Mathematics Education
- SAILS - Strategies for Assessment of Inquiry-based Learning in Science – <http://sails-project.eu/>
- INSTEM is a Comenius network, which brings together the experience and learning of a wide range of projects in European Science and Mathematics education.

Majella Dempsey and Niamh Burke will also be presenting on FaSMEd at the **Educational Studies Association of Ireland (ESAI)** conference 'Educational Research and Practice in Times of Transition: Looking to the Future' in April 2015.

We look forward to hearing about forthcoming dissemination across the project. Please send details to: Lucy.Tiplady@newcastle.ac.uk

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News from Nottingham

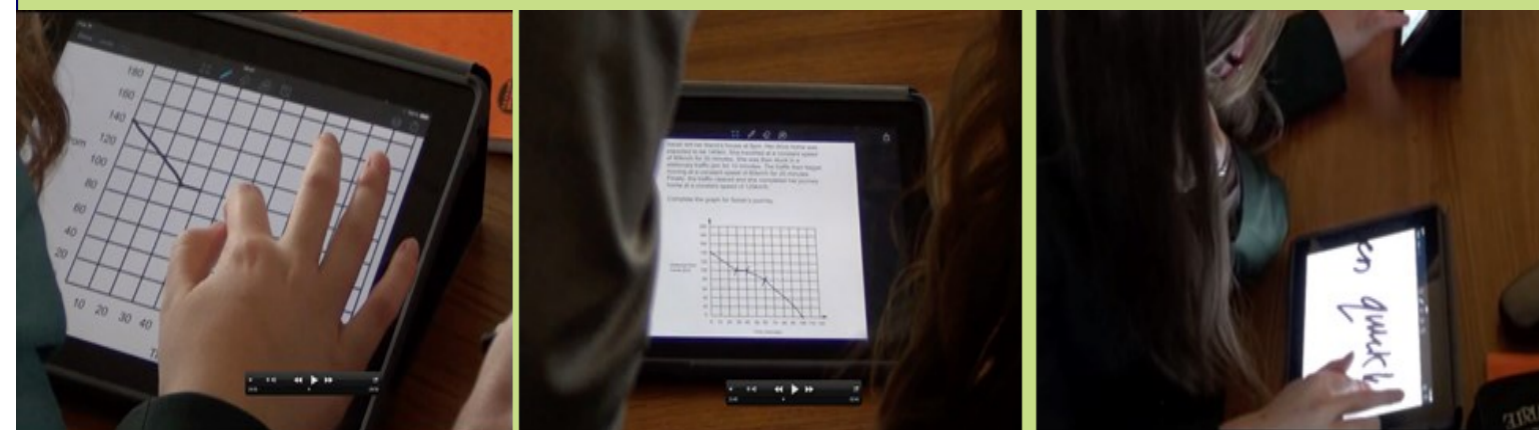
The Centre for Research in Mathematics Education (CRME) at the University of Nottingham is a well-established research centre, known for the quality of its research and design on mathematics education policies, curricula, assessment, CPD and classroom practice. Its particular strength lies in its emphasis on designing and analysing processes, products and experiences with and for teachers and learners. For full details, see our website at <http://www.nottingham.ac.uk/education/research/crme/>

Our challenge

With a long history in the area of design research, the Centre holds a rich bank of lesson materials that encourage formative assessment through diagnostic tasks, collaborative work, questioning, peer assessment and the use of sample student work. The challenge for us with the FaSMEd project is to build on that foundation and explore how technology can be used effectively to support formative assessment in similar ways.

Our local schools

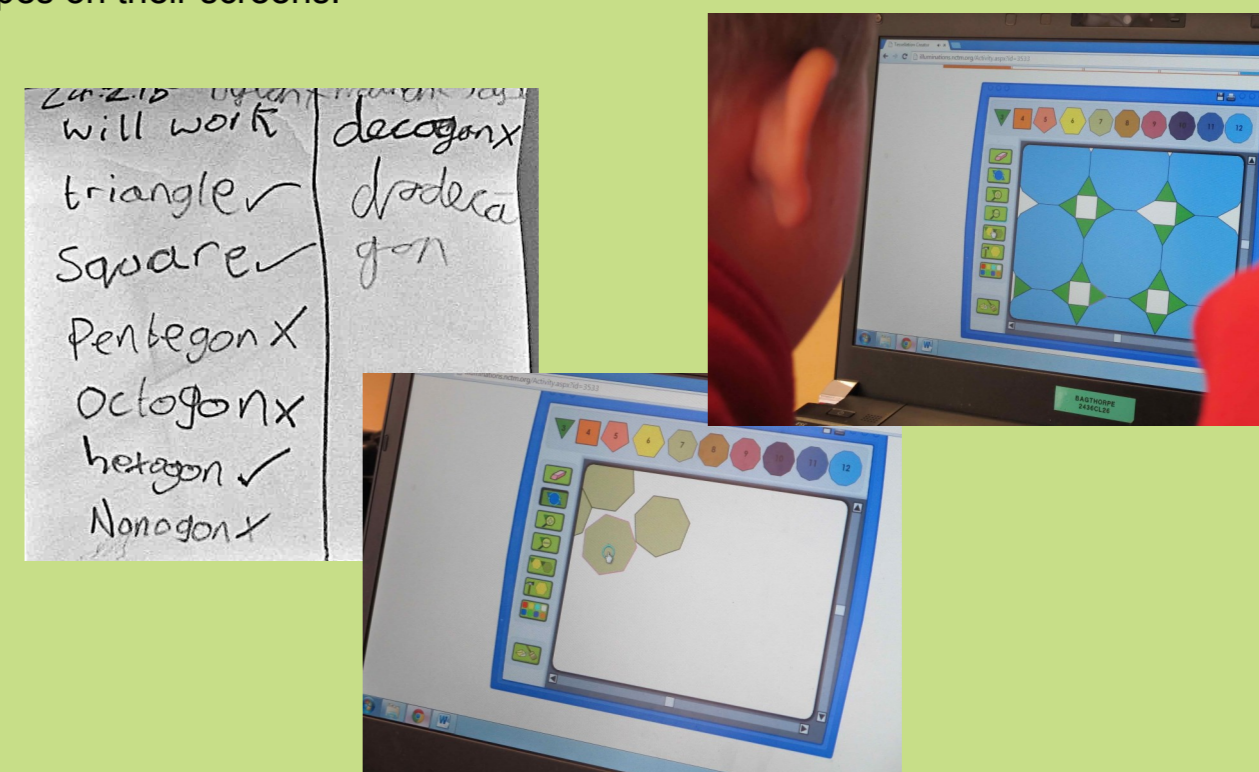
We are working in with three local schools, with three participating teachers in each and focusing on the use of iPads in mathematics lessons. Many schools have class sets of iPads in England but how much they are used varies between and across schools. Typically each of our schools has their own particular interest in how they can use the iPads effectively and they each commence from a different starting point. In one school iPads are issued to every student in Year 10 (age 14/15 years) and teachers use these confidently in lessons. One of the concerns here is that in using the iPads teachers have identified that there is less small group discussion and peer assessment in mathematics lessons so they are keen to explore how this can be improved. The other two schools use class sets of iPads and one of the barriers for some of the less experienced teachers is the perception of time being wasted in setting up, logging on and dealing with technological failures. In an education system where there is pressure to achieve high levels of student attainment, any time investment in alternative pedagogy creates tensions until the benefits have been clearly identified. FaSMEd is building the confidence of these teachers and allowing them to explore ways in which technology can enhance the students' learning experience, thereby providing benefits that may outweigh the possible inconveniences.



Lesson activities

In the first round of activity each school has developed a lesson suitable for their students by drawing on CRME materials but also incorporating their own ideas. Each teacher has then taught the lesson, with space for discussion, reflection and adaptation in between these lessons. These have included some creative and interesting features, for example:

- teachers using a web-based resource to send diagnostic questions to students in advance of the lesson that then provided an overview of students' responses reasons for choosing each of their answers;
- teachers displaying students' solutions to questions on the interactive whiteboard in various ways and being able to select appropriate work for class discussion to address common misconceptions;
- students working on 'mirrored' questions and then comparing answers in pairs, engaging in peer assessment and reaching a shared understanding (i.e. some students constructed a distance-time graph from the description of a journey whilst others were writing a 'story' to match the graph);
- students working in pairs and predicting which regular shapes would tessellate before testing their predictions using software that allowed them to quickly move and rotate shapes on their screens.



Areas to explore

In this first phase of lesson activity the technology was clearly beneficial to teachers in providing information that they could use to adapt their lessons or to address misconceptions through class discussion. Students also benefitted from being able to explore and construct visual representations quickly, thereby allowing more time for questioning and discussion. We are currently exploring ways of analyzing the video-recorded sessions in greater detail, using software developed by CRME. Our questions now focus on identifying the benefits more clearly and examining ways in which technology may change the formative assessment processes more significantly than simply providing a substitute for a paper-based approach.