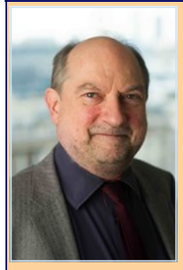
Meet our Evaluators

Our evaluators are commissioned to evaluate whether FaSMEd reaches its objectives concerning low achievement in science and mathematics. They are a small group of world experts on science education, educational technology, mathematics education and assessment. They meet annually to review progress and produce a report, the first of which is due on the 31st December 2014.



Professor Justin Dillon

Justin is professor of science and environmental education and Head of School at the University of Bristol. After taking a degree in chemistry, Justin trained as a teacher and went on to teach in six secondary schools in London. His research originally focused on teaching and learning about chemistry in England and Spain. Over the past 15 years he has focused more on science learning outside the classroom particularly in museums, science centres and botanic gardens. Together with two colleagues at King's, Justin co-ordinated the ESRC's Targeted Initiative on Science and Mathematics Education (TISME) and was a member of the ASPIRES project. He was elected President of the European Science Education Research Association from 2007-2011 and co-edits of the International Journal of Science Education.

Dr Alf Coles

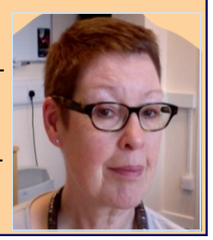
Alf came to the University of Bristol after fifteen years' experience in secondary schools. His PhD study was centred around the role of discussion both in learning mathematics, and amongst teachers learning to teach mathematics via discussion of video recordings of lessons. Alf recently completed a project funded by The Rayne Foundation with five primary schools focused on tackling underachievement in primary mathematics through creativity. Alf has previously been involved in research projects funded by the ESRC, the Teacher Development Agency, the National Council for Excellence in Teaching Mathematics and BECTA.

Professor Kenneth Ruthven

After teaching in schools in Scotland and England, Ken (neth) Ruthven joined the Faculty of Education at the University of Cambridge, where he is now Professor of Education. His research focuses on curriculum, pedagogy and assessment, especially in school mathematics, and particularly in the light of technological change. His research and development projects have been carried out with support from agencies including the Economic and Social Research Council, the Nuffield Foundation, the Qualifications and Curriculum Authority, and the (former) National Council for Educational Technology.

Professor Vivienne Baumfield (Ethics Evaluator)

Vivienne is Professor of Pedagogy, Policy and Practice in the School of Education, University of Glasgow and International Dean for Eurasia and South Asia. Her research focuses on inquiry approaches to learning in the professional development of teachers and the role of school-university partnerships in the creation and translation of pedagogical knowledge. She is Editor of the Review of Education.



For further information please see: http://research.ncl.ac.uk/fasmed
Or email: fasmed@ncl.ac.uk

The project FaSMEd has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 612337

FaSMEd NEWSLETTER

Issue 4 19th December 2014

Welcome to our fourth issue of the FaSMEd newsletter. This issue includes news and updates from across the project, with a particular focus on our South African partner, AIMSSEC.

We wish you all a happy new year and look forward to our work together in 2015.

This issue was produced by Newcastle University, UK, and AIMSSEC, South Africa.

Thank you very much to our hosts at the Universita degli Studi di Torino who organized a very productive and enjoyable meeting.

Toolkit Launch meeting in Torino

FaSMEd partners met at the Toolkit Launch in Torino from the 13th to the 15th October 2014. Here partners discussed the prototype toolkit which will begin to be trialed with teachers from January 2015 and will be the focus of the design study. The prototype toolkit can now be viewed at: http://toolkitfasmed.wordpress.com/ and will undergo ongoing review over the coming year. We welcome feedback not only from our case study schools but also more widely and so if you have any comments please do not hesitate to get in touch by emailing: fasmed@ncl.ac.uk

We were also very fortunate to be able to visit a local school in the Torino area with teachers who will be working with FaSMEd. We were very warmly welcomed, given a tour of the school and invited to take part in a number of lessons with students aged nine to thirteen years.

FaSMEd at 2nd Scientix Conference, Brussels

David Wright (Newcastle, UK) represented FaSMEd at the 2nd Scientix conference from the 24th-26th October 2014. In total there were 600 participants at the conference, including 400 teachers of STEM subjects.

David gave a joint presentation with representatives from SAILS and Assist-me, who we also shared an exhibition booth with and distributed briefing papers. We look forward to future collaborations with our fellow EU projects, for more information on these projects please see:
http://www.sails-project.eu/
http://assistme.ku.dk/

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Focus on South Africa

AIMSSEC is the African partner within FaSMEd. As with all partners, it has specific cultural contexts which influence the way the FaSMEd research is developing. Here we provide some of the contextual background against which we are working and explain what we have done so far.

About AIMS and AIMSSEC

The African Institute of Mathematical Sciences, AIMS, has three main activities: Master's courses for young people from all over Africa, research in mathematics and schools enrichment. AIMSSEC is the schools enrichment centre of AIMS. It is a not-for-profit organisation, which provides professional development for mathematics teachers, subject advisors and field trainers in South Africa mainly from disadvantaged rural and township communities.

AIMS is located in Muizenberg in Cape Town. Muizenberg is probably best known for its long beach, which is very popular with surfers, and for the wind! As we will be having cluster meetings with our research participants, and we will be visiting them in classrooms, we have invited teachers from the Cape Town area to take part, although AIMSSEC generally works with teachers from all over South Africa.

The crisis in South African education in schools …

It is generally agreed that South Africa's education system is in crisis and maths and science education are particularly problematic. For example, Spaull (2013), in his report for the Centre for Development and Enterprise in South Africa, states that however South African pupils are measured, their performance is worrying.

"however one chooses to measure learner performance, and at whichever grade one chooses to test, the vast majority of South African pupils are significantly below where they should be in terms of the curriculum, and more generally, have not reached a host of normal numeracy and literacy milestones (Spaull, 2013, p. 3)."

There seem to be many reasons for the 'crisis in education', which are related in complex ways. These include poor teacher content knowledge (particularly in mathematics), high drop-out rates in the last years of school, large class sizes, unequal educational opportunities, lack of accountability and professionalism amongst many teachers, teacher strikes, ongoing changes to curricula with insufficient support for teachers to make these changes and the fact that many young people are taught in a language (usually English) which is not their mother tongue and their teachers are also not fluent in this language.

(References available on our blog, fasmedaimssec.wordpress.com, where there are also reports about initial visits to schools, outreach meetings, more on the South African context and our general progress).

… with pockets of excellence

In the problematic context we have described, FaSMEd South Africa has found teachers who want to take part in the project, are willing to give their time and from whom we will learn much. We are delighted to welcome these teachers to the project, whether they are able to make a full 'teacher collaborator' commitment or whether they can only promise to be 'critical friends'. The teachers come from a range of secondary schools, from those surrounded by informal settlements and shanty towns (these schools are free) to those in well-established Cape Town suburbs where the houses are big (which usually charge fees). There are some in-between and there are also two vocational colleges for post-16 students. We have chosen to work with a relatively high number of schools because a) we did not want to turn anyone away and b) we wanted to have schools from across the very wide range of state schools in South Africa.

Most of the teachers attended FaSMEd outreach workshops between July and October 2014 and have tried out at least one of the activities in the South African version of the FaSMEd toolkit. They have all agreed to teach at least one lesson from the toolkit, and many will teach more.

Zukile Sisilana and Severino Sedeya from Vuyiseka Secondary School are two of the teacher collaborators. Here they are working on the 'Properties of Exponents' lesson.

It may be important to be flexible about how we work with some schools and in some cases the FaSMEd work will include workshops with, for example, the whole mathematics department.

Our over-arching research question relates to how the teachers use the toolkit; the teachers will be the focus of our data collection but we will also collect data from the students. Data collection will begin in mid February 2015. The school year begins in late January and the teachers need some time to settle into the new term before we come into their classrooms for observations**.**

The South African toolkit

Most teachers follow the 'Curriculum and Assessment Policy Statement', commonly referred to as 'CAPS'. Our understanding from stakeholder meetings is that teachers are more likely to implement new activities for formative assessment if these fit in with CAPS. We will be working mostly with Grade 8 and Grade 9 teachers from a range of schools. As a starting point, we identified CAPS topic areas that are common to both grades in the first term and are seen as difficult to teach.