CASTME
Commonwealth Association of Science, Technology and Mathematics Educators

e-Newsletter

Number 6 www.castme.org.uk **August 2012**

Editorial

How best may we motivate young and old to learn and understand Science and Mathematics? For some, the interest itself is quite enough. The fascination of scientific research is all consuming. Jocelyn Bell's contribution to our understanding of the universe and the stars, particularly pulsars has enthralled many of us. For the majority of us though, it is the relevance of the subject to our lives that matters – we learn because we need to know. This is particularly true when dealing with the challenges of poverty, lack of food or housing around the world. Technology is the key.

In this Newsletter, there are several examples of where this is the case: particularly in the Wulugu article by Lynn Symonds. Understanding is essential for an engineer who uses his or her ingenuity to solve problems and design new technologies and systems. Surely the greatest motivator is to learn and understand through the application of science and mathematics to solve our problems. Here we are venturing into the new. Such an approach to mathematics and science leads to improvements for all – through a "leading out" – the root of what education is all about – let alone science and technology.

CASTME Award Scheme

Teachers and officials (advisers, inspectors, etc.) working in primary, secondary and tertiary education are invited to enter for the CASTME Awards.

Entries should be educational projects, which address the social or human context of science, technology and mathematics.

Individuals or groups may submit projects.

Only one project can be accepted from any one individual or group. Projects previously submitted for a CASTME Award may not be re-submitted.

For further information and entry form, please contact: ChrisMcLaren@Winchester.ac.uk **to whom entries should be sent by 31st December 2012**

All CASTME award enquiries should be addressed to
Dr Bridget Egan, CASTME
Faculty of Education
University of Winchester
SO22 4NR
UK

CASTME Lecture

– in memory of Dennis Chisman

by **Professor Dame Jocelyn Bell Burnell**

On: Wednesday 13th March 2013

At: 6.30 pm

At: The University of Westminster, Regent Street, London W1B 2UW

The subject will encapsulate the concept of science as an educational motivator world-wide

CASTME regularly commemorates the late Dennis Chisman, who died in 2008, with a prestigious Memorial Lecture. He was an inspirational founding member of both CASTME and ICASE (International Association of Associations for Science Education) and also its President.

Dennis Chisman

The Alexander Prize

This award is specifically for women educators working under difficult conditions. The award is named after the Alexander family who worked in science education in many commonwealth countries for over 50 years. It is supported by the ASE, the UK Association for Science Education. The Alexander Prize will be awarded to a woman or group of women who has made a significant contribution to encouraging the scientific, technological or mathematical education of girls or women in a situation of particular difficulty or scarce resources.

A nomination for the Alexander Prize should be made in the form of an essay explaining the reasons for the nomination, and detailing the achievements of the nominee/s over a period of time. Such a nomination may be made by a third party, or by the nominee herself.

Nominations for the Alexander Prize should be sent by 31st December 2012 to:
CASTME Awards Co-ordinator,
c/o Faculty of Education Health & Social Care,
University of Winchester,
West Hill,
Winchester,
SO22 4NR
UK
Christine McLaren at: Chris.McLaren@Winchester.ac.uk

CASTME
Commonwealth Association of Science, Technology and Mathematics Educators
e-Newsletter

STEM in the Field – and in the Sahara

Breaking with Business as usual – by Lynne Symonds

The Wulugu Project' has been working in tandem with CASTME for 15 years and has explored many of the possibilities to develop the enormous untapped opportunity to build understanding of STEM amongst girls and women who have had limited or no exposure in formal schooling. The findings:

- are challenging
- worthy of further research
- point to practical solutions which need implementation.

Practical STEM is life enhancing and life-saving, but practitioners in the field are few, poorly trained and often physically beyond the reach of those who have most to gain. In Northern Ghana less than 1% of heads of families have had any education and most girls and women have had little or no schooling and are illiterate. They are in desperate need of survival skills to enable them to make the most of their lives in the most challenging of environments.

Vocational education, together with health, nutrition and family-care-education, can be a life-saving tool: particularly when it imparts skills such as tailoring, catering and hairdressing, with a firm STEM base. Local teachers need to be aware of this in order to maximise their long-term impact on the lives of their students.

Perhaps even more importantly, basic survival depends on clean water and on growing better crops linked with efficient animal husbandry, good transport and marketing. For this, competently developing and using the necessary technology sustainably, requires relevant understanding of science and maths.

One of the problems for primary education in these difficult geographical areas is the recruitment and retention of teachers, exacerbated by poor infrastructure. Teachers need simple accommodation, particularly the females that are needed as role models. The Wulugu Project has actioned this in some villages and helped teachers to play a wider role in the community to increase their self-esteem.

Wulugu has an exceptional track record of increasing the numbers of girls regularly attending schools. This has been encouraged by the provision of small loans to women, enabling them to afford to send all their children to school.

CASTME has been working with Wulugu on an innovative programme with the aim of increasing the understanding of HIV/AIDS in the remotest and most neglected communities. It is worth noting that in a first workshop that involved dignitaries from the health services and education in Nigeria, Cameroon, Gambia and Ghana, the deeply held early informal learning principles eg that mosquitoes spread HIV, together with the influence of traditional healers, were considerable barriers to attitude change.

A very effective programme has been designed to enable primary teachers in four remote areas to take on board such issues and encourage the implementation of relevant solutions to good effect. Such teachers are well equipped to talk to villagers having both local respect and knowledge. This low cost, high impact programme enhances the attitudes and understanding of the teachers themselves and has the potential for long term high impact.

Further information is available from Lynne Symonds, founder, via CASTME or see: www.wulugu.co.uk

ICASE World Conference 2013

See: http://www.icase2013.org/

International Council of Associations for Science Education

The ICASE World Conference on Science and Technology Education will take place from Sunday 29 September to Thursday 3 October, 2013. It will be held in the Borneo Convention Centre, Kuching, Sarawak.

CASTME is fully supporting this conference.

CASTME
Commonwealth Association of Science, Technology and Mathematics Educators
e-Newsletter

Ann Rumpus - New CASTME Treasurer

Dr David Moore has decided to relinquish his role as CASTME Treasurer after 5 years of dedicated work and Ann Rumpus has taken over.

Ann has just retired from the University of Westminster. Having gained a PhD on fish parasites at Exeter University, she was appointed as a lecturer and researcher in the Biosciences at Westminster.

She soon became increasingly interested in curriculum design and delivery which led to her devising the University's modular and credit transfer system and developing an institution-wide innovative course for mature students that included the recognition of prior experiential learning.

Ann developed and managed the University's Educational Development Unit which provides courses for staff on Higher Education delivery, an MA in Higher Education and a PGCE course for teachers of Lifelong Learning, delivered in 7 partner colleges.

Recognising her international expertise and interests, the university involved her in the provision of staff development in learning and teaching to college and school teachers in Nigeria, India and Uzbekistan.

Perhaps most important in her new role, Ann has undertaken a series of accountancy examinations as a hobby!

Engineering understanding questionnaire

This questionnaire was compiled and used by Sue Dale Tunnicliffe and Kath Nugent to ascertain children's understanding of the role of engineers in society at the ASE Conference 2012.

Results will be supplied.

Please write the responses and return to:

Dr Tunnicliffe, 907. Institute of Education, 20 Bedford Way, London WC1H 0AL. UK, s.tunnicliffe@ioe.ac.uk

Date Identity Age
Gender

- What does word engineering mean to you?
- What is an engineer?
- What do engineers do?
- Do you know any engineers?
- What kind?
- Where did you meet them?
- Would you like to be an engineer?
- Why? Why not?
- Please tell me more
- Anything else about engineering?

The Association for Science Education
Promoting Excellence in Science Teaching and Learning

ASE Annual Conference 2013 @ University of Reading

Wednesday 2nd - Saturday 5th January 2013

Research Seminar Series
Promoted by the ASE Research Committee
Papers on science education research topics welcome.
Contributions are sought on:

- teacher education
- early years education,
- primary education
- secondary education
- curriculum development and evaluation
- pedagogy
- learning and assessment in science

Submit a 500 word pdf abstract to f.j.woodhouse@hud.ac.uk setting out research questions and rationale, background to the study, methods, findings and references as soon as possible. References not included in word count. Final Conference paper to be submitted by 31st October 2012: delivery: 20 mins; questions: 10 mins

CASTME
Commonwealth Association of Science, Technology and Mathematics Educators
e-Newsletter

Some activities – from the CASTME leaflet

Raising crops to learn about plants and about sustainable development – winner from Ghana

Students of the 2010 winner (Seychelles) learning science by creating and calibrating low-cost instruments

Students and teachers working on a project for the CASTME Awards

Sharing teaching ideas and materials across India – an award winner with his visual representation of the periodic table

The CASTME awards celebrate the creativity and energy of science teachers from around the world, in finding new and engaging ways to help their students learn Science, Technology or Mathematics.

We welcome entries from teachers in any Commonwealth country who has a brilliant idea for teaching which can be shared with others across the world.

See Page 1 for details of how to enter for the CASTME Awards.

Editor's Note: The next edition of this newsletter will be published in November 2012. Please send requested articles *to* Jonathan Ling *at:* j.g.ling@btinternet.com by Monday 22nd October 2012. CASTME website: http://www.castme.org.uk

Registered Charity 1111749 Limited Company Registration 05001658