International Council of Associations for Science Education

Supporting and promoting science education internationally
The ICASE Newsletter

APRIL 2011

Welcome to the ICASE April 2011 Newsletter !

The ICASE Newsletter is a regularly distributed publication containing current information about topics of interest in the field of science education. The table of contents for this issue is located in the right hand column.

The International Council of Associations for Science Education (ICASE) was established in 1973 to extend and improve science education for chldren and young people throughout the world. Today, ICASE is a huge network of science education associations, institutions, foundations and companies, facilitating communication and cooperation at the regional and international level.

International Council of Associations for Science Education

http://www.icaseonline.net

Contents of Newsletter

Join the ICASE Community to receive the Newsletter

For information please visit our web page:
http://www.icaseonline.net

Read or Submit a Manuscript to the ICASE Journal:
Science Education International

For information please visit our Journal web page:
http://www.icaseonline.net/seiweb

Editorial;
Jack Holbrook
ICASE Past President
jack@ut.ee

Bulent Cavas
Publications Committee Chair
bulentcavas@gmail.com

ICASE News

Jack Holbrook, ICASE Past President

1. ICASE CENTRES

In the last newsletter, the President's report for 2010 mention that the first ICASE centre is established in Guilin, China under Prof Luo Xingfai. This newsletter provides more information on its objectives and scope of work.

Objectives:

The ICASE Guilin Teacher Training Center, through workshops and other activities, provides an opportunity for science teachers and educators to meet together in order to:

• Learn from and Interact with invited science education experts on how to create and wisely use high educationally valued teaching materials in order to make genuine improvement on science leaning and teaching.

• Share ideas and experiences with each other in science teaching practices.

• Visit and discuss with RISE and it's partner schools on developing featured science teaching resources.

Scope of Work

The cooperative efforts, through the design, execution and evaluation of training courses and research studies between GXNU and ICASE are intended to –

- Promote modern views on the nature of science, the nature of science education and scientific literacy.
- Initiate ways to strengthen the relevance and popularity of school science education.
- Enhance the development of teaching materials using real and virtual experimentation methodologies.
- Encourage greater attention in school science education towards local, national and regional socio-scientific and indigenous issues as a means of raising the relevance of science and technology in daily life.
- Promoting science education as student centred, hands-on, inquiry-led investigations through which problem solving and decision-making are important elements of education for lifelong learning.
- Enhance effective and continuous professional development of teachers as a key step towards greater teacher ownership of more relevant science education and wider approaches to assessment seen as aiding student learning.
- Supporting greater efforts for teacher education and the education of the trainers of teachers to appreciate the need for interdisciplinary teaching approaches.
- Strengthen existing partnership and create new ones to include all stakeholders in promoting science education for the 21st century; and undertake evaluation of all training and in-service provision established and to encourage research in the field of science and technology education.

ICASE News (Cont.)

2. PROFILES PROJECT

ICASE had the opportunity to join a meeting of leads of currently operating Science Education projects under the European Commission. PROFILES is one of these designed to promoted continuous professional development of teachers towards enhancing Scientific and Technological Literacy for All. All projects are focused to promote inquiry learning although appreciating the multiple facets of this in the classroom situation is proving a challenging task. The PROFILES contribution was to draw attention to the teaching material on the website of its fore-runner project (www.PARSEL.EU). PROFILES will upgrade these, including the 7 modules produced under the ICASE label. There are

- How Best to maintain a Metal Bridge?
- Should Zero Emission Cars be made compulsory – Is it feasible?
- Am I being Cheated in the Market Place?
- Should Vegetable Oils be used as a Fuel?
- Should we do more to save Monuments from Corrosion?
- Which Soap is Best?
- Traffic Accident: Who is to Blame?

3. ICASE in Brussels

Within the People 2 People programme of the European Commission, ICE had the opportunity to make a short presentations to people from potential future EU members (principally the Balkan countries and Iceland). The presentation put forward the THE ICASE MISSION Leadership in an active, global, collaborative science education community. Within the field of Science Education collaborating with partners at a national, regional or worldwide level:

- Coordinate research, collaboration and resources.
- Undertake world and regional conferences.
- Instigate dissemination beyond national boundaries.
- Delivers advocacy at UNESCO and with Governments globally to ensure relevant curriculum development and policy development.
- In providing global coordination and leadership.

From Research to Practice – the ICASE role. Recognising and Promoting that

- Science Education differs from Science.
- 'Education through science' is more important than 'science through education'.
- 'Enhancing Scientific and Technology Literacy' is the goal of school science teaching.
- 'Developing scientific competence' and 'gaining scientific concepts' are not the same.

In conclusion the presentation pointed out that ICASE supports National groups worldwide.

- It can support science education groups (teachers; teacher educators) in your country.
- It can involve groups in its projects.
- It can disseminate to teachers (via its open source, online newsletters and peer reviewed journals) (www.icaseonline.net).

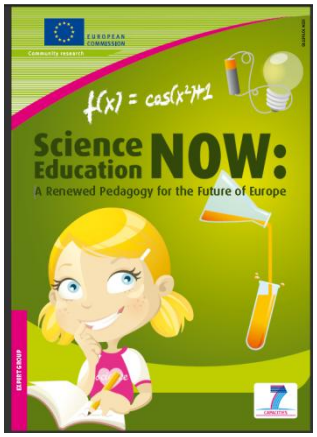
Follow up to the ICASE Tartu Declaration

Jack Holbrook

In the declaration, the participants at the ICASE World Conference in Tartu 2010 resolved that:

> *an inquiry approach is central to STE, where students formulate scientific and technological questions, investigate those questions and build and apply conceptual understandings;*

This also a major recommendation from the 2007 European Commission report, called Science Education Now, as well as being a major message emanating from European Commission funded projects.



http://ec.europa.eu/research/science-society/document_library/pdf_06/report-rocard-on-science-education_en.pdf

In Science Education Now, two important observations which are highlighted are:

1. Science education is "out" amongst young people; the proportion of young people enrolled in math, science, and technology (MST) studies is decreasing.
2. The way science has been taught so far doesn't make MST (maths, science and technology education) appear attractive - in fact, there is evidence that the negative attitudes towards science are connected firmly with the way science is taught. If the prevalent deductive methods were abandoned in aid of inquiry-based methods, an increase of interest in science could be achieved within all kinds of students.

In essence, inquiry- based methods in science education relate to the asking of scientific questions. The scientific questions form the foundation from which investigations, or other forms of inquiry, stem. But two major questions arise:

A. How can students be expected to ask the scientific questions?
B. How can teaching involve the asking of the scientific question?

If deductive methods in science teaching are to be heavily reduced and students are to be involved in the thinking behind the learning process, then it is very desirable for students to ask the meaningful scientific question that leads to further learning. While this might be fairly straightforward at the primary school level, where the students are enthused by science, the report mentioned above indicates this is not the same with secondary level students (at least in European countries). The students need to be drawn into the learning and recognise the value of the scientific question.

For this, it is suggested, there needs to be a trigger. And the trigger needs to work even for those students who want to learn scientific ideas, or simply want to learn (whatever is on offer).

Follow up to the ICASE Tartu Declaration (Cont.)

What is the trigger? The PROFILES project, mentioned in the ICASE news section, suggests this is a familiar socio-scientific issue, concern or situation, which is apparent in society *and which is seen as relevant by the students*. This might be about drinking (alcohol) and driving, the use of creams/cosmetics and the like, or health issues and perhaps even local environmental issues.

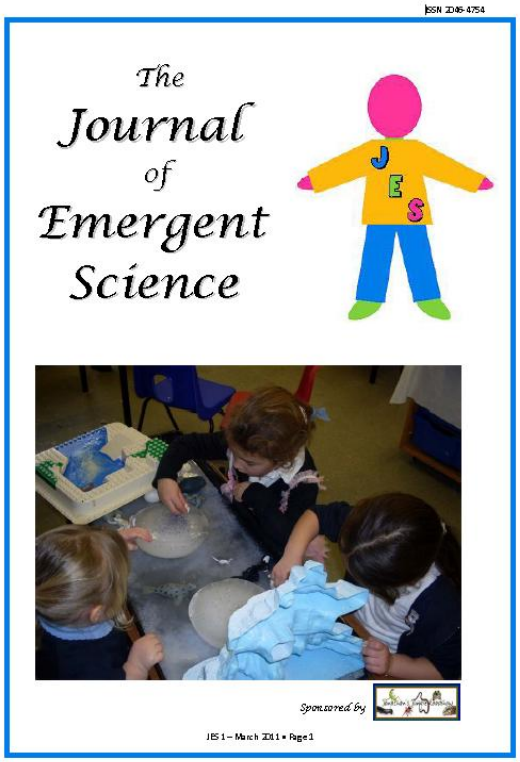
As long as the familiar situation is related to science, or the science aspects can be identifiable, the projects philosophy suggests this socio-scientific aspect can be the starting trigger for the teaching. Inevitably such teaching will begin in a social manner, stressing the familiarity while allowing the teacher to determine the strength of prior science knowledge possess by the students, especially related to, but not exclusively towards, the science directly involved. This will take teaching time, especially if brainstorming is involved, following by group identification of aspects of relevance, or removal of aspects of irrelevance, but the steps taken to stimulate student interest (identifiable at least in part, but their involvement) is expected to be the reward.

The next step, of course, is to move towards the scientific question which is the gateway to the inquiry learning of the unknown science (and the science involved in the inquiry must be unknown to the students – why undertake the inquiry otherwise !!). This approach will definitely mean the teacher is asking questions - probing questions, stimulus questions, prompting questions, reinforcement questions – slowly identifying the extent of the science that is not known and which can be explored through inquiry learning, once the scientific question is posed.

Whether the inquiry learning is heavily structured, teacher guided in any number of ways, or very open when students are able to explore their own pathways, will depend on students' prior experiences in inquiry learning and, naturally, scientific background. These various inquiry learning approaches are further indicated in a later section of this newsletter on **Scientific Thinking and PISCES**. But whether the students come up with the scientific question, or this has largely been put forward by the teacher, with the scientific question in place, the inquiry can begin with the teacher as facilitator.

The Tartu declaration strongly promotes inquiry learning and sees the socio-scientific approach to the scientific learning a relevant and useful way forward. The trigger allows science education to be seen as wider than learning scientific concepts and inter-relates science with society.

Launch of the Journal of Emergent Science



The first edition of the Journal of Emergent Science (JES) has been published on the ASE website. www.ase.org.uk JES is a professional research e-journal published by the Emergent Science Network in collaboration with ASE. The journal focuses on science (including health, technology and engineering) for young children from birth to 8 years of age. The key features of the journal are that it:
- is child-centred;
- focuses on scientific development of children from birth to 8 years of age, considering the transitions from one stage to the next;
- contains easily accessible yet rigorous support for the development of professional skills;
- focuses on effective early years science practice and leadership;
- considers the implications of research into emergent science practice and provision;
- contains exemplars of good learning and development firmly based in good practice;
- supports analysis and evaluation of professional practice.

Articles in the journal highlight the importance of first learning and experiences in science and attempts to redress the emphasis on secondary science education, especially since science learning starts at birth. The co editors, Jane Johnston (Bishop Grosseteste University College Lincoln) and Sue Dale Tunnicliffe (Institute of Education, London) are researchers and lecturers fascinated by these critical years where interest and understanding of science is formed and passionate about focusing on support for professionals who are attempting to use the impact of research to develop their own practice.

The journal will be published twice a year; March and September. During 2011 it will be free and from 2012 by subscription (£30 per year), although all ASE members will continue to receive the journal free of charge as a membership benefit.

Dear Readers,

Greetings from St George's Girls' School (SGGS), High Performance School, Penang, Malaysia!

We have great pleasure in inviting your students to an exciting event, the 2nd SGGS International Students' Conference to be held from **28-31 May 2011 at SEAMEO-RECSAM, Penang, Malaysia**.
This conference, with its theme "Youths of Today, Leaders of Tomorrow" aptly chosen, gives an opportunity to students from different parts of the world to come together and give serious thought to their role as the world's future leaders. This conference acts as a platform for students to voice their opinion and hopefully contribute towards charting an outstanding leadership in addressing global issues and community service.

We have planned a conference that not only allows students to listen and respond to renowned invited speakers but also make paper and poster presentations in which the best presentations will win prizes.
Please do not forego this opportunity for your students to play an active part at this conference. Delegates may be aged 17-19 years old. The minimal conference fee of USD100 covers accommodation at RECSAM International House, food, conference materials, heritage tour and a farewell dinner.

If you need further information, please do not hesitate to contact Stephanie Cheong at +60-014-9091348 or email sggsconf2011@gmail.com

We look forward to welcoming your students to our conference.
For further details, you may log onto: www.smkpstgeorge.edu.my

Thanks and regards

Shariffah Afifah bt Syed Abbas
Principal

ICAS^{2}E: I Care About Safety in Science Education

Jim Kaufman, CSSE Chair

The Tartu Declaration states that health and safety are integral and important part of science education. To do this, ICASE members and member organizations need to care more about health and safety issues. The role of the ICASE Committee on Safety in Science Education (CSSE) is to help develop and provide the ideas, information, programs and resources that members need to achieve the goal stated in the declaration.

The CSSE has proposed to the Executive Committee that ICASE "brand" the initiatives from CSSE around the organization's name and the theme of **"I Care About Safety in Science Education".** The acronym, **ICAS^{2}E**, captures both the spirit of the theme and the identity of the organization. We propose using this as the heading for the CSSE column in the ICASE Newsletter. CSSE is sharing this proposal here in the April ICASE Newsletter in the hope of receiving readers' comments and suggestions.

The column will continue to include quarterly "Safe Science – Be Protected" contributed articles from Ken Roy (a CSSE member and former Committee Chair), quarterly articles contributed by myself and others, and CSSE's answers to questions on science safety posed by Newsletter readers, website visitors, and from other sources. All material submitted to the column will be reviewed by CSSE.

The Laboratory Safety Institute (LSI) will provide a complimentary copy of either "Safety Is Elementary" or "Safe Science – Be Protected" to Newsletter readers and website visitor whose contributed articles or questions are selected to be answered in the Newsletter. The questions and answers will become part of an FAQ section on the CSSE web pages.
In addition to these initiatives, since the meeting in Estonia, CSSE has (1) expanded its membership, (2) contributed to the newsletter, (3) expanded the information resources (Laboratory Safety Guidelines, Proposed Activities and Information Resources) on the website with assistance from the webmaster and now (4) brought two revenue generating suggestions to the Exec for consideration: sales of publications and professional development courses.

First, we have proposed that ICASE offers a full range of publications on science education for sale. These would include both new publications from a range of publishers and currently existing ICASE publications.

Second, concerning training programs, we offered the following suggestions:
1. Offer a group of ICASE professional developments courses at both the ICASE 2013 World Conference, in the regions, and/or with ICASE Member organizations.
2. Advertise the availability of additional professional development courses on the ICASE website and newsletter.
Please share your ideas, suggestions, questions, and articles with CSSE. You can contact the ICASE Committee on Safety in Science Education at CSSE@icaseonline.net

Teaching Scientific Thinking 5: A module.[1]

Colin Smith

We have been exploring the application of a model of scientific thinking to actual practice. This model is one dimension of a larger, five dimensional model of inquiry.[1] The aim has been to help teachers to think about how scientific thinking can be supported in different lessons. However, some may require more support in engaging with models such as this. This final article aims to outline a pilot S-TEAM module. This module was run by members of Strathclyde University to help teachers think about how to incorporate more inquiry-based pupil learning into their practice. Its aim is to illustrate the utility of teacher engagement with analytical models generally, as well as the one offered in this series. First, here is some background.

Background

As a European Union (EU) Framework 7 project, S-TEAM arises from the concern that science education is not encouraging a sufficient uptake of scientific careers, and contributes by encouraging more inquiry in science classrooms. S-TEAM has some 26 institutions involved, across 15 countries, providing a variety of teacher professional development activities. The focus of Strathclyde University is on Initial Teacher Education (ITE), but we needed an up-to-date understanding of the issues faced by in-service teachers, in order to meet the needs of student teachers. An opportunity was seen in the Curriculum for Excellence (CfE) initiative in Scotland, which also sees inquiry-based learning as desirable - for reasons similar to the EU, but also due to its compatibility with social democracy. Through Fearghal Kelly, a biology teacher seconded as a Development Officer for CfE for East Lothian Council, teachers were invited to form a learning community to explore issues of inquiry within the CfE.

Initially, the teachers did not want this sort of community, but expected some kind of 'delivery' of CPD. This was a problem since we do not have universally applicable solutions to making science learning more inquiry-based – there are too many different contexts and types of classes/pupils (nationally, let alone internationally).

One reason for developing our model of inquiry was to facilitate the analysis by teachers of their own contexts and practice. So a form of CPD, called PISCES, was created. We believe that PISCES has useful guidelines and suggestions for both teachers and teacher educators that are applicable beyond Scotland.

1. The work reported here is part of the S-TEAM (Science Teacher Education Advanced methods) Project. https://www.ntnu.no/wiki/display/steam/SCIENCE-TEACHER+EDUCATION+ADVANCED+METHODS
2. Those wishing to find out more about these dimensions can look at the previous contributions to this publication or download Smith et al (2010) from the S-TEAM site (see refs) or from http://edubuzz.org/blogs/pisces

PISCES (Promoting Inquiry Skills for a Curriculum for Excellence in Science)

PISCES came together when the implicitness in our thinking became explicit – promoting 'empowerment, not prescription.' Empowerment meaning that through 'tools' enabling teachers to think about their practice, contexts and pupils; come up with their own intervention questions; and test out improvisations themselves. Not entirely new, but an approach, it seems, that could be more common.

A module outline was circulated by Kelly to invite participation[1] and eight teachers were able to complete the module[1]. There is not space to describe the PISCES module in detail. However its outline and other materials used, as well as presentations by the teachers of their interventions, can be found at http://edubuzz.org/blogs/pisces.

Participants completed a pre-module activity before the first meeting. Incorporating a version of the Herron model of inquiry (S-TEAM, 2010), the activity is designed to explore the levels of inquiry that might exist in an example from participants' current practice, as well as introduce an approach to analysis and reflection that will prove useful during and after the course. Kellow (2010) recently presented an interesting development of this model (see earlier newsletter – Nov. 2010). Readers might like to compare this with modifications to session one (below). Both show the danger of outsiders being prescriptive to teachers about how to carry out inquiry. It is also interesting that both Kellow and these teachers focussed on developing the second level. (Speaking from later evaluation, one teacher spoke of not liking this model until it had been expanded).

Session One

Introduction: A discussion and analysis were undertaken of findings of the participants' pre-module activity. This 'kick-started' thinking about processes and practices in inquiry-based science education. As mentioned above, the Herron model was developed, as Table 1.

The sub-levels within 2 are not a hierarchy, but variations for the undertaking of inquiry teaching which fit different circumstances. It is notable that the teachers' interventions seem mainly to fit into levels 2C-2E. The exception is one intervention that is interpreted as a planned progression down the problem column from given to open. There was also some discussion of whether **level 3** occurred very often, even in 'real science.' Projects are set in the context of what has gone before and what is available in terms of apparatus and known techniques, resulting in at least some broad parameters. *If you are a teacher, you might ask if these level descriptions also better fit your circumstances and make inquiry seem a more realistic possibility.* Making everything 'open' may not really be your immediate aim.

[1] It turned out that this group had little overlap with the original. Some teachers had become very busy with other things in the interim, but some may have been put off by the lack of structure at the initial meeting. There may be lessons here about structuring CPD. Perhaps the term 'CPD' implies, to many teachers, that there will be more structure than a simple invitation to join a learning community and to raise questions to pursue in that community.

[1] Two withdrew at the beginning due to a shared event that had nothing to do with the module, but with emotional impact that is hopefully unusual. Another dropped out nearer the end, citing pressure of time.

Table 1: Levels of inquiry showing enhancement by teachers for level 2 in PISCES pilot

Level of inquiry	Problem	Material	Procedure	Answer
0	Given	Given	Given	Given
1	Given	Given	Given	Open
2 (Type A)	Given	Given, totally or partly	Open, or partly given	Open
2 (Type B)	Given	Open	Open	Open
2 (Type C)	Partially open/ given as broad parameters	Open	Partially given (e.g. through previous experience of controlling variables, analogy with other experiments or forms of investigation) but open the in sense of not being told what to do	Open
2 (Type D)	Given	Partially given by providing a range of material that includes (*as a subset*) what is required.	Open *from* pupils' perspective *(but given from teachers as a need to use materials provided)*	Open
2 (Type E)	Open	Partially open – here's what we have in this school	Open *(but what about safety?)*	Open
3	Open	Open	Open	Open

Session Two

Scientific Thinking: participants were introduced to the S-TEAM project's five dimensional model of scientific inquiry. Following this session, participants were asked to complete a record of a classroom lesson, or topic that took place. The aim was to consider to what extent this activity supports scientific thinking, and any other issues that the model of investigation suggests. We will return later to insights from the teachers regarding this model.

Session Three

A way of devising intervention questions was offered and participants then began to formulate their questions and design their interventions. A poster technique was used to enable sharing, commenting on and questioning of intervention plans.

Session Four

This session can best be described as one of 'collaborative critical friendship'. Through discussion and review of some general resources on science education, the teachers discussed their plans and considered some issues of evaluation, including the use of models provided by the team as evaluation tools.

Sessions Five and Six

Teachers presented their interventions. It was particularly noticeable that the teachers had put in a great deal of thought into their interventions and the results very much impressed all of us, including two members of S-TEAM not directly involved in PISCES.

Short discussion

As can be seen from visiting the PISCES blog, the interventions of the teachers were very different from each other. Teachers strove to meet concerns regarding their current pupils and we see this as a justification, and a measure of success, for our approach to empowering them. Perhaps visiting the blog will be empowering for some readers. Of definite interest to teachers is the shared focus, across the interventions, on getting the pupils to ask questions, whether these are of their own construction or ones that they come to adopt as their own. The teachers were in agreement that inquiry does not necessarily involve experiments or other forms of research (though these are essential to science education), but that **all learning becomes inquiry when the pupils have questions in mind that are being answered.** This fits with the finding mentioned previously in this series that even traditional teacher-led lessons can be supportive of scientific thinking. Two teachers also talked about switching **from 'giving answers' to 'prompting thinking'.** These examples also indicate that where understanding of content is important (e.g. in learning about recombinants in genetics), **prompting, as if one is a more experienced researcher, is a legitimate practice ("**What if we think about the positions of the alleles along the chromosomes?"). What about the five dimensional model *(origin in understanding, origin in goals, control of the investigation, degree of openness, aspects of scientific thinking used)?* Teachers talked about a need to engage with the model, to think about their own lessons in relation to the examples given, and to build up an understanding of it in this way. This took time. However, they also said that its use had become embedded in their practice, although they are still learning about it. Again, its result has been empowerment, rather than prescription of immediate answers to problems of practice. We also talked together after the module was completed about the danger of the model becoming an end in itself. Teachers talked about using it as a tool for thinking about what they were doing before and what they were doing now (sometimes doing both after their intervention). The model was not the direct generator of their interventions, however. These arose from their concerns about the differences between what they wanted to do with their pupils and what they were actually doing. Another mark of success is that the teachers have asked for a follow-up module, in part so they can feel empowered to deliver PISCES themselves. Perhaps, if you are a teacher, you will be encouraged by these outcomes to engage with the model and the other materials more thoroughly. Perhaps, we can help you in this. If you are a teacher educator, you might like to discuss how you might use and adapt the module. We would welcome any communications.

Kellow, J-M. (2010) Modified Herron Model for classifying inquiry learning. *The ICASE Newsletter, November issue (see www.icaseonline.net).*

Smith C., Kelly, F. and Mackenzie, S. (2010) Support for Scientific Thinking in School Science Investigations: A Teaching Tool. In S-TEAM deliverable, 6.1, *Developing Scientific Thinking in the Classroom Through Inquiry.* S-TEAM: https://www.ntnu.no/ wiki/download/attachments/8325736/Deliverable+6a+April+2010.pdf?version=1

Colin Smith, retired Biology Teacher, currently works as a Research Associate in the S-TEAM Project and is based at the University of Strathclyde. (colin.a.smith@btinternet.com)

Mini-symposium, Reading, 20-21 June 2011, UK

20-21 June 2011 (welcome reception on 19th)

Contemporary Issues in Science and Technology Education

The symposium is open to all working in the field of science and technology education, including established researchers, Masters and Doctoral students, and practising teachers in schools.

We invite papers on completed empirical research and theoretical issues in science and technology education.

In the first instance, send a 1000 word abstract in Word format to the coordinator, John Oversby (j.p.oversby@reading.ac.uk) including the frame for the research, the research questions, methodology, outline data, analysis, interpretation, implications, and selected references, for empirical papers and parallel areas for theoretical papers by December 31st 2010. Abstracts will be blind reviewed and invitations for full papers up to 12 pages sent to successful authors by January 30th 2011, to be received by March 30th 2011. We intend to seek a publisher for presented papers.

Oral papers at the symposium will have 20 minutes followed by 10 minutes discussion. If there is sufficient response, we will also accept posters for a special session.

Reading is close to Heathrow and Gatwick airports by frequent public transport, and easily accessible from budget airline Stansted and Luton airports.

IOSTE home page: www.ioste.org. Symposium home page www.IOSTE-NWE

The registration fee and other details will be available by October 2010

The International Conference on Teaching Science and Mathematics using Toys and Hands-on Activities, 4-7th July 2011, Thailand

THEME

Teaching Science and Mathematics using Toys and Hands-on Activities

OBJECTIVES

The conference provides an opportunity for science, mathematics and technology educators from schools, universities, scientists to meet together in order to:

- Share ideas and experiences in using toys, games and out-of-school activities for teaching
- Interact with educators from different fields with interest in science, mathematics and technology education at all levels
- Recognise approach to promote scientific and technological literacy for all

DATE

4th – 7th July 2011

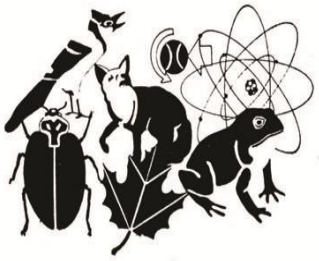
VENUE

The conference will take place at Nong Nooch Garden & Resort, Pattaya, Thailand
http://www.nongnoochgarden.com/home.html

ACCOMMODATION

Special room rate at Nong Nooch Garden & Resort, Pattaya, Thailand will be reserved upon requested.

The International Conference On Teaching Science and Mathematics using Toys and Hands-on Activities



Supported by

- International Council of Associations for Science Education (ICASE)
- Walailak University
- Triam Udom Suksa School of the South, Nakorn Si Thammarat
- Science Teachers' Section, Science Society of Thailand

SECRETARIAT

Dr.Janchai Yingprayoon
International College,
Suan Sunandha Rajabhat University
Bangkok 10300, THAILAND
e-mail: dr.janchai@gmail.com
Tel. +66 2160 1193,
Tel. +66 81-641 2533, +66-81-651 2591
Fax: +66 2160 1199
www.ssruic.com

The International Conference On Teaching Science and Mathematics using Toys and Hands-on Activities

4th – 7th July 2011,
Nong Nooch Garden & Resort,
Pattaya, Thailand

Organised by
International College,
Suan Sunandha Rajabhat University

The International Conference on Teaching Science and Mathematics using Toys and Hands-on Activities, 4-7th July 2011, Thailand

TOPICS

The conference will cover abroad range of topics on the use of toys and hands-on activities in scientific and mathematical research and teaching. The topics include, but are not limited to:

- Folk toys
- High-Tech science toys
- Using a laser beam in teaching science and mathematics
- Using a data-logger for science experiments
- Digital equipment for teaching science
- Environmental science activities
- Multimedia Learning in Science and Mathematics
- Science Exhibitions and museums
- Science Show
- Application of The Geometer's Sketchpad and Graphics Calculators

Etc.

TENTATIVE PROGRAMME

DAY 1: Monday July 4, 2011
- Registration
- Opening Ceremony
- Keynote Address
- Plenary Lecture 1
- Workshop 1: Environmental Science
- Workshop 2: Pottery and gardening
- Reception dinner

DAY 2: Tuesday July 5, 2011
- Plenary Lecture 2
- Plenary Lecture 3
- Presentation of Papers / Posters
- Concurrent workshop 3 and 4
- Exhibitions of Science Toys

DAY 3: Wednesday July 6, 2011
- Plenary Lecture 4
- Presentation of Papers / Posters
- Concurrent workshop 5 and 6
- Poster session
- Concurrent workshop 7 and 8
- Farewell Dinner

DAY 4: Thursday July 7, 2011
- Cultural Show
- Science Show
- Exhibitions of Science Toys
- General Discussion
- Closing Ceremony

PROGRAMMES

There will be keynote, plenary lectures, conference, paper presentations, poster displays and exhibitions. Details of the programme will be available from **http://www.ssruic.com**

CALL FOR PAPERS

Contributed papers highlighting news and recent development in the areas covered by the conference theme are invited.

THE CLOSING DATE

The closing date for submission of titles and abstracts (not exceed one page) is May 6th, 2011.

On request, the secretariat of the conference will send a personal invitation for participation in the conference. It should be understood that such an invitation is only meant to help participants raise travel funds or obtain visas, and is not a commitment on the part of the organizer to provide any financial support.

LANGUAGE

The language of the conference will be English.

REGISTRATION FEE

4000 Baht (Inclusive: Lunches, Refreshments, Reception and Farewell dinner, Workshop materials, Excursion and Cultural shows)

The organizer will arrange a special exhibition corner for Science Toys and Hands-on Activities from all around the world. The participants who would like to bring some folk toys or activity works from their homeland are very much welcome.

ChemEd conference New Zealand, Palmerston North, 17-20 July 2011

2011 is the International Year of Chemistry and what better way to celebrate it than to join with chemistry educators and researchers from across New Zealand and abroad. ChemEd 2011 *Celebrating the International Year of Chemistry* seeks to do exactly this, bring together chemistry educators and researchers from across sectors to share together, learn from each other and celebrate the wonders of chemistry.

The 2011 conference will be held in Palmerston North, a hub of scientific endeavour and research. Alongside important tertiary institutes such as Massey University and UCoL Palmerston North is home to a wide variety of research institutes and scientific companies, providing a perfect atmosphere of discovery and enterprise. The venue for the conference will be the modern and architecturally inspiring Universal College of Learning (UCoL) located in the heart of city centre. The facilities here will provide a perfect environment for a conference such as ChemEd2011 and allow for easy walking access to town, local accommodation, restaurants and bars.

Confirmed key notes speakers so far include Jonathan Hare (UK) and Dr. Tony Wright (Aus). Jonathan carried out his PhD working on buckminsterfullerene with Prof. Sir Harry Kroto and he is well known for his television work in series such as *Rough Science* as well as his involvement in the development of the Creative Science Centre. Tony has strong connections with Palmerston North, having worked at Massey University prior to working at the University of Queensland. Tony has had a long and passionate interest in Chemistry education and the use of information and communication technologies to support learning.

The value of chemistry educators coming together in times of continual change cannot be overstated. As changes to Level 1 NCEA take place in 2011 and further changes to Levels 2 and 3 in subsequent years it is important we join together, share our knowledge, hear from experts and provide a voice to contribute positively to the changes taking place. Not only that, it also allows to continue building links to both.

http://www.chemed2011.co.nz

Early bird registration is now open. The process is very easy and there is an option to generate a GST invoice for your school so that you don't have to front up with the money – assuming your school has agreed to fund it of course.

The Future of Science Education, 22-24 July 2011, Singapore

Blending traditional conference formats with 21st century technology, Science Singapore 2011 will be a unique meeting where the latest research and best practice in science education come together, presented by educators from around the world. There will also be multiple opportunities for social gatherings and sightseeing in this fascinating city and surrounding countries!

Features of Science Singapore 2011:
Three parallel presentation strands consisting of
Keynote speakers in science education, web-based technology, and inspiring lives;
Continuous short (20 minute) talks—two per hour with breaks,
45 minute presentations and 90 minute double sessions for interactive, practical workshops.
Session strands scheduled as one block and repeated during the conference for more attendance opportunities;
• Internet networking to promote the conference via Twitter, Facebook. Google, and Email;
• Long distance interaction with breakout groups via internet chats;
• Forums via Skype;
• Live online streaming of sessions;
• Technology mentors for participants;
• Download session videos;
• One half day devoted to "un-conference" format of posted topics, participant voting and flexible scheduling of most popular choices;
• Electronic and traditional message boards;
• "Viewing party" prospects for distance discussions in small local groups;
• Live and eight-hour delay broadcasts of sessions.
Coordinators: John Stiles, Bangkok, Science Educator and Consultant; and Rob Newberry, Singapore, Educational Technology Consultant who organized the first TEDx conference in Bangkok. Conference information: http://sites.google.com/site/scisg2011/

6th Science Centre World Congress, 4-8 September 2011, South Africa

6th SCIENCE CENTRE WORLD CONGRESS
4 - 8 SEPTEMBER 2011
CAPE TOWN, SOUTH AFRICA
Science Across Cultures

Science Across Cultures

The 6th Science Centre World Congress will be held in Cape Town, South Africa, 4-8 September 2011. Enjoy stimulating congress sessions, challenging workshops and lively debates. And enjoy all that Cape Town and South Africa have to offer - whale watching, wine tasting, a unique floral kingdom, big game safaris, beautiful beaches, unparalleled scenic beauty, and a friendly and diverse culture. With the theme "Science Across Cultures", the 6th Science Centre World Congress will encourage reconciliation between different cultures and a greater appreciation of the role that science centres can play in highlighting each culture's unique contributions to science, technology and science education.

Registration Fees and Information

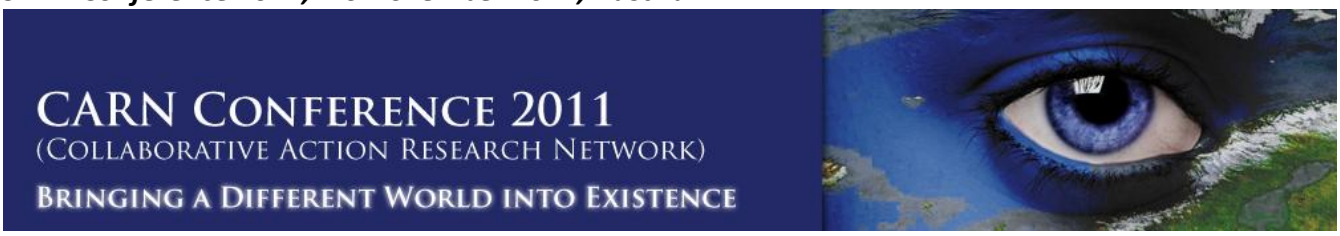
Registration for 6SCWC will be opening in September 2010.
Congress Registration Fees
Registration – Early (until 3 June 2011) ZAR 5,525.00
Registration – Standard (until 19 August 2011) ZAR 6,525.00
Registration – Late ZAR 7,525.00
*Registration - Discounted (until 3 June 2011) ZAR 4,250.00
* Residents of low-GNI (gross national income) countries are eligible for a discounted registration fee.
If you would like to make your own accommodation arrangements at a B&B, hostel or guesthouse, the 6SCWC

Congress Secretariat recommends www.capestay.co.za. Please note that the Congress Secretariat can only make bookings at the designated congress hotels and cannot be responsible for accommodation booked independently by delegates.

Rates quoted are per room, per night, including breakfast, including 14% VAT, excluding a compulsory 1% Government Tourism Levy.

More details from the website www.6scwc.org

CARN Conference 2011, 4-6 November 2011, Austria



Bringing a Different World into Existence

The Collaborative Action Research Network (CARN) was founded in 1976. Since that time it has grown to become an international network drawing its members from educational, health, social care, commercial, and public services settings. CARN aims to encourage and support action research projects (personal, local, national and international), accessible accounts of action research projects, and contributions to the theory and methodology of action research. In line with the tradition, we would like to invite academics and practitioners by welcoming a diverse range of contributions, no matter what stage the research is at (from initial ideas through to completed reports and papers). There will also be opportunities to consider methodological issues.

Keynote Speakers
Peter Posch Herbert Altrichter Ingo Eilks Katherine Froggatt

Indicative Themes
- AR for unity and diversity
- AR for coping with the challenges of a knowledge society
- AR and workplace cultures
- AR in teacher education and professional development
- AR in palliative care and in nursing homes
- AR in health promotion
- AR and community development
- AR methodology and methods
- AR and Participatory Research in fields of social work
- AR in science education, environmental education/education for sustainable development
- AR in curriculum development, school development, networking and system intervention

Indicative Dates
30th April 2011 deadline to send a proposal
20th June 2011 answer for the approval of a proposal
1st July 2011 deadline for early bird registration
Call for papers and posters end of January 2011. Participative workshops are particularly welcome.

For more information please visit: http://ius.uni-klu.ac.at/carn

21st Symposium on Chemistry and Science Education to be held at the TU Dortmund University, 17-19 May 2012

Issues of Heterogeneity and Cultural Diversity in Science Education and Science Education Research

The 21st Symposium on Chemistry and Science Education will continue the long tradition begun in 1981 with the first symposium on chemical education organized by Hans-Jürgen Schmidt. The 2012 symposium is titled **"Issues of Heterogeneity and Cultural Diversity in Science Education and Science Education Research"**. Heterogeneity and cultural diversity are becoming increasingly important challenges for educational systems worldwide. Growing rates of migration and higher numbers of multi-cultural societies mean that educators must achieve a broader spectrum of competencies among their young people. Science and chemistry teaching are not untouched by these developments, challenging the practices and methodologies in these areas. Answers are demanded from science education research in the areas of understanding potential problems and providing impulses towards more effective practices.

The symposium's main questions will address:

- Which science teaching problems are connected to different areas of heterogeneity in science classrooms? How can they be overcome?
- Which influences do learners' multi-cultural backgrounds have concerning the learning of science?
- What types of problems arise due to different linguistic abilities or a background including a different native language? How can we best deal with linguistic heterogeneity in science classrooms?
- How can we teach the domain-specific language of science in classes containing students with different native languages?
- How do we cope with students with special needs in science, e.g. in lab environments?
- What are the challenges in and potential innovations involved with teaching gifted children in science classes?

Which changes can examples of good teaching practices in different countries suggest for bettering science teaching with respect to issues of heterogeneity and cultural diversity?

All contributions will be presented by invited lecturers. There will be key-note lectures and short presentations. Suggestions for appropriate lectures are welcome by May 2, 2011. Please contact Dr. Silvija Markic, University of Bremen: *smarkic@uni-bremen.de*.

Conference chairs: Prof. Dr. Bernd Ralle, TU Dortmund University, *bernd.ralle@tu-dortmund.de*; Prof. Dr. Ingo Eilks, University of Bremen, *ingo.eilks@uni-bremen.de*; Dr. Silvija Markic, University of Bremen, *smarkic@uni-bremen.de*; Prof. Dr. David Di Fuccia, University of Kassel, *difuccia@uni-kassel.de*

Further information: *http://www.chemiedidaktik.uni-bremen.de/symp2012/index.html*.
A second announcement will follow in Autumn 2011.
Conference fees: None. Travel costs, accommodation and social events are the responsibility of the participants.

ICASE Executive Committee 2011-2013

The ICASE Executive Committee is persons who make decisions on behalf of the ICASE Governing Body. The ICASE Governing Body is the **ICASE member organisations**.

President
Dr. Ben Akpan
Executive Director of STAN, Nigeria
E-mail: ben.akpan@stanonline.org

Secretary
Dr. Beverley Cooper
E-mail: bcooper@waikato.ac.nz

Past President
Dr. Jack Holbrook
Professor, Centre for Science Education
University of Tartu, Estonia
E-mail: jack@ut.ee

Treasurer
Peter Russo
E-mail: ceo@asta.edu.au

President Elect
Dr. Teresa J. Kennedy
Professor, University of Texas at Tyler
E-mail: tkennedy@uttyler.edu

Regional Representatives

Regional Representative for Africa
Mamman Wasugu
E-mail: mammanwasagu@yahoo.ca

Regional Representative for Europe
Dr Declan Kennedy
E-mail: d.kennedy@ucc.ie

Regional Representative for Asia
Azian Abdullah
E-mail: azian@recsam.edu.my

Regional Representative for Latin America
Christiane Gioppo
E-mail: cgioppo@yahoo.com

Regional Representative for Australia/Pacific
(to be determined)

Regional Representative for North America
Michael Padilla
E-mail: padilla@clemson.edu

ICASE Executive Committee 2011-2013

Chairs of Standing Committees

Safety in Science Education
James Kaufman
E-mail: jim@labsafetyinstitute.org

World Conferences & Environmental Education/Sustainable Development
Elaine Horne
E-mail grovesr@ozemail.com.au

Pre-secondary and Informal Science Education
(to be determined)

Publications & Website
Bulent Cavas
E-mail: bulentcavas@gmail.com

For more information about ICASE Executive Committee, you can visit ICASE Web www.icaseonline.net