Supporting and promoting science education internationally

The ICASE Newsletter October 2010

Newsletter of the International Council of Associations for Science Education.

Contents of this issue (to go to any item, select, then click left mouse button)

Apologies for the absence of a September newsletter.

1. ICASE News

The 3rd World Conference 2010)

This was held June 28 - July 2, 2010 in Estonia on the theme - **Innovation in Science and Technology Education: research, policy, practice**. Besides keynote presentations and presentations by highlighted speakers, there were over 100 paper presentations, 20 workshops and interactive posters displayed, grouped into 4 common areas – *Innovation in science teaching*, *Innovations in the Philosophy of Science Education*; *Innovations in Teacher Preparation/Development Innovations in Student Understanding* and *Materials for Teaching*. Presenters of all types of presentations are invited to submit full papers for consideration in the ICASE journal and other ICASE publications.

Videos of the Conference

A number of the keynote presentation were recorded on videotape and are currently stored on the University of Tartu website. These can be viewed on http://www.is.ut.ee/pls/ois/videod.otsi

To get to the opening/keynote and highlights on the first day change (by clicking) the calendar (bottom left on the screen) to June and to the 29th. For the second day presentations, go to 30th, 3rd day the 1st July and the highlights and closing on the 2nd July.

General Assembly

The 11th ICASE General Assembly was held on the 28th June 2010 in Hotel London conference room, Tartu, Estonia. This was chaired by the ICASE president and in attendance were members of the ICASE Executive Committee, representatives from 17 organisations and 28 observers.

The new officers who will take over in January 2011 are:

(a) Management Committee

ICASE President: Ben Akpan *Organisation:* STAN Region*:* Africa
ICASE Past-President: Jack Holbrook, Europe/President-Elect:Teresa Kennedy N.America
ICASE Secretary: Beverley Cooper NZASE Australia/Pacific
ICASE Treasurer: Peter Russo ASTA Australia/Pacific

(b) Regional Representative

Africa	Mamman Wasagu	Nigeria	Asia	Azian Abdullah	Malaysia
Australia/Pacific	*(to be determined)*		Europe	Declan Kennedy	Ireland
N. America	Michael Padilla	USA	Latin America	Christiane Gioppo	Brazil

Also on the committee are chairs of standing committees. These persons are appointed by the Executive Committee and at a meeting held after the General Assembly. The following chairs were appointed:

(c) Chairs of ICASE Standing Committees

Primary Science	Ian Milne	New Zealand
Safety in Science Education	James Kauffman	USA
Environmental Education/ Science Education for Sustainable Development	Elaine Horne,	Australia
World Conferences	Elaine Horne	Australia

(Additional details will be put on the ICASE website)

ICASE Executive Committee Meetings

ICASE held an Executive Committee meeting on the 27 June where 10 of the 13 members were present (one not present because of flight delay and 2 apologies for non-attendance). The main business was to consider the General Assembly, the 3rd ICASE World Conference arrangements, as well as the draft of Declaration and matters arising from a previous Executive Meeting in Malaysia in 2009. The meeting confirmed an earlier decision that the 2013 World Conference would be held in Sarawak, Malaysia (dates to be decided).

A further ICASE Executive meeting was held on Friday/Saturday 2nd/3rd July, following the World Conference. The meeting considered matters arising from the General Assembly and ***appointments of Chairs of Standing*** Committees needed for future ICASE activities (and who also make up the membership of the ICASE Executive Committee). Besides maintaining the 3 previous standing committees (World Conferences, Pre-secondary and Informal Science Education, and Health and Safety in Science Education), the Executive Committee considered Environmental Education/Education for Sustainable Development; Publications Committee (covering Website, Journal and Newsletter); and a Committee for Developing and Interlinking ICASE Centres around the World. The first two were set up, the third is under further discussion.

Further considerations reflected on:

(a) involvement in Worldwide dissemination of a European Union project (PROFILES) on Professional (teacher) Reflection-Oriented Focus on Inquiry-Based Learning (by students) and Education through Science (as a philosophy)

(b) changes in the structure of ICASE to forge greater links to Universities/Institutes, Academies of Science, UNESCO, ICSU and other groups,

(c) a professional joint agreement between ICASE and Globe (The Global Learning and Observations to Benefit the Environment Program). More details in future newsletters.

Member organisations, who will receive full minutes of all meetings and the General Assembly, are very much invited to comment, make recommendations and to express interest in involvement.

Other readers of this newsletter are also invited to comment and make suggestions, particularly where they are from a University, centre etc which may have interest in future involvement.

2. Science Activities

These following activities are from a collection built up by ICASE through its former primary science newsletter (STEP) and other sources. They are put forward to bring attention to small activities which can be carried out in the science classroom with minimal equipment.

A STEP ACTIVITY

Challenge: How can you make large bubbles?

What you need

- liquid detergent
- glycerine
- water
- straws
- string
- scissors
- large shallow dish or frying pan

What to do

To make bubble solution, mix a quarter cup of liquid detergent and a quarter cup of glycerine with two cups of water. Mix well.

This bubble solution can be stored in a jar. Pour some bubble solution into a large shallow dish, such as a frying pan.

To make a bubble frame which makes big bubbles, you will need two straws and some string.

What do you see? The frame has a large square bubble film attached to the straws and string.

Use the straws to form two sides of the square frame. Pass the string through the straws and tie a knot to complete the square. Tuck the knot into the end of one of the straws. Lower the frame into the large dish of bubble solution. Lift up the frame. What do you see? The frame has a large square bubble film attached to the straws and string. What happens when you move the straws? The bubble film moves too. Hold the frame up and blow towards the bubble film. Can you make a large bubble by blowing into the frame?

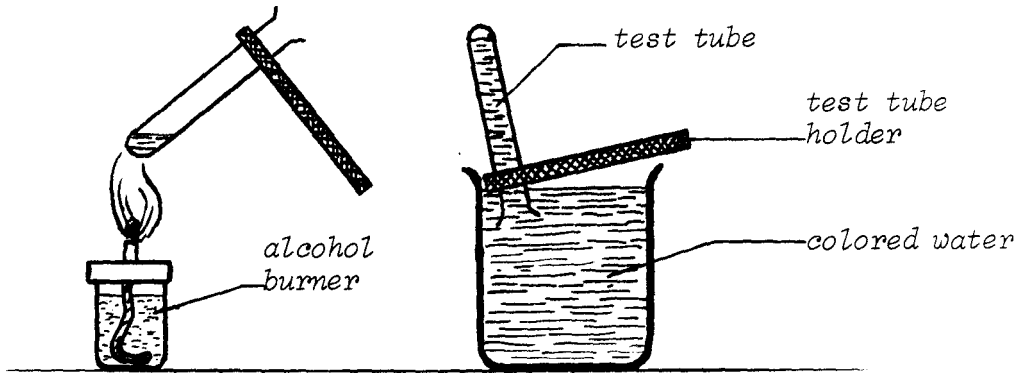
More to do

- Use the frame to investigate which bubble solutions lasts longer. Try bubble solutions with less detergent, more detergent, no glycerine, more glycerine Try adding other substances such as sugar to the detergent solution.
- Cool the bubble mixture in a refrigerator. Does cold bubble mixture last longer?
- Design different bubble frames to make bubbles of various shapes

B) ADDITIONAL SCIENCE ACTIVITY

THE MYSTERIOUSLY RISING WATER

Materials:
1. One test tube & test tube holder (or equivalent)
2. One large beaker (400 ml) or other water container
3. One Bunsen or alcohol burner & food colouring



Procedure:
1. Fill the large beaker with cold water and colour.
2. Put a little water in the test tube (about 3 ml) and boil it (A).
3. After the water has been boiling vigorously for about 10 seconds, invert this test tube immediately in the coloured water (making sure that the test tube mouth stays under water).

Questions:
1. What is in the test tube besides the water before heating?
2. What is in the test tube during the heating?
3. What happens during inverting of the test tube in the colored water?
4. What does water do when it is boiled?
5. What does water vapor do when it is cooled?
6. How did the temperature of the test tube change when it was inverted?
7. Why did the colored water rise in the inverted test tube?

Explanation:

Before the heating, the test tube was filled with a little water and the rest was air. Water vapour was produced by boiling the water and this water vapour pushed out the air in the test tube (vigorous boiling of the water). After inverting the test tube in the coloured cool water, the hot water from the test tube poured out into the large container, the test tube slowly cooled off, causing the water vapour to condense. This decreases the pressure inside the test tube and thus the water is pushed up the tube by the existing *atmospheric air pressure*.

Other very similar events are: *The Mysteriously Rising Water (I)* and *The Fountain in a Flask*. We encounter this kind of an event in daily life sometimes when, after boiling water or soup in a pan with a well fitting top, cooling the pan afterwards and trying to open the cover, only to find the cover to be sticking to the pan.

C) USING EXPERIMENTAL IDEAS IN SCIENCE TEACHING

This newsletter contains two experimental ideas. It is hoped that these are of interest. But how to use these experiments in teaching? Teachers need to be free to include experimentation as they feel best, but given below is ICASE thinking in putting forward the experiments in this newsletter. Teachers and science educators are welcome to comment.

1. Who does the experiment ?

Clearly these experiments can be undertaken as a teacher demonstration. However, the intention is that the students are involved, either working individually, or more likely, in small groups. The apparatus is kept as simple as possible and can often be brought from home, or made by the students themselves.

Why is student involvement preferred ? We note the old Confucius saying – I hear and I forget; I see and I remember; I do and I understand. The belief is that the more students are engaged, the more they learn. Teacher demonstrations, or large group experiments, limit student involvement and are thus not preferred.

2. Should instructions be given to students ?

The sections *'What to do'* and/or *'Procedure'* clearly spell out how to undertake the experiment. But it is not intended that the experiment must be used in this way. By following instructions, a *'cookbook,'* or *'follow a recipe'* situation is created. This highlights the **doing,** but **probably not** the understanding. Where instructions are provided, the student learning can be expected to be the explanation that follows. And the teacher is then focusing on students' explanatory skills. The questions have been added to the first experiment to encourage moves away from a 'cookbook' or 'do-and-forget' approach and towards a more exploratory approach. In the second experiment the questions seek understanding which can lead to modifications of the experiments for more novel effects. It will a pity if the teacher is the person who answers these questions. In fact it would be interesting to learn of situations where the students, themselves, are both asking and then answering the questions.

3. Inquiry learning

Can the experiments be used in an inquiry approach, whereby the students ***raise questions*** and **suggest the *purpose* and *procedure themselves* ?** This is very much an ICASE recommended approach. It means students put forward the investigatory question, plus the procedure to follow. It promotes science as the seeking of explanations to questions put forward rather than to a 'wondering why' approach, although perhaps this is appropriate for the younger students.

So what would be the investigatory questions for these experiments ?

This is a challenge left for you to consider.

3. ICASE Declaration

Jack Holbrook, ICASE President

Tartu Declaration on Science and Technology Education

The World Conference on Science and Technology Education held in Tartu, Estonia, 28 June – 2 July 2010 put forward a declaration – to be known as the Tartu Declaration. It was agreed the declaration is as follows:

We, the conference participants from 35 countries, believe that 21st century Science and Technology Education (STE) should prepare students for rapidly developing, knowledge-based societies.

Access to high quality education is a fundamental right for all in preparing for responsible global citizenship in a sustainable world. Human considerations that need to be at the forefront of thinking, planning and actions related to STE include respect for: human rights; health; peace; poverty alleviation; cultural diversity; indigenous knowledge; and gender equity.

Young people are naturally curious about their world and issues that affect them personally, locally and globally. Increasingly they indicate their interest in current science and technology.

Nurturing confident life-long learners, with skills, attitudes and capacities to thrive in complex societies is a high priority. Planning and implementing effective STE needs to take account of the moral, ethical and value-laden contexts within which science and technology is situated. Effective STE includes an emphasis on the development of life competencies such as problem-solving, decision-making, learning and working individually and collaboratively.

Increasingly, an STE teacher's role is to provide links between students and scientific and technological expert sources. Curricula should allow students to participate in engaging, experiential, hands-on STE. This should be in a range of relevant contexts, on a need-to know basis, and build on children's natural curiosity. Information and communication technologies, particularly the Internet, are increasingly becoming essential tools for students to interact with science and technology. Health and safety concerns are integral and important to STE.

The conference participants call upon all involved in research, policy development and practice in STE to implement this Declaration in their regions of the world, acknowledging the key roles of teachers.

We resolve that:

- innovative STE is of fundamental importance throughout life commencing at the earliest years;
- major goals for STE are active, ethical citizenship; responsible, evidence-based decision-making; and high levels of satisfaction in STE;
- STE involves students developing and applying scientific conceptual understanding to make sense of contexts in their evolving world;

- inter-disciplinary learning in relevant contexts is essential, to reflect the nature of professional science and everyday science and to allow teachers to build on students' interests and questions;
- an integrated approach to STE needs to be implemented, because science and technology are inseparable as we move into the future;
- students' involvement in decisions about their own STE learning is essential;
- an inquiry approach is central to STE, where students formulate scientific and technological questions, investigate those questions and build and apply conceptual understandings;
- assessment policies and practices that improve students' learning need to be implemented;
- high-quality teacher preparation and continuous professional learning support are essential in order for teachers to create rich, relevant, interesting, current and timely STE;
- STE policy and practices should be informed by evidence-based research findings and research in STE encouraged and supported.

ICASE will embark on steps to follow up this declaration and invite member STAs to join in

4 Is Inclusive Science Education the new Contemporary Science Education?

Simone Abels & Prof. Dr. Annelie Wellensiek

In a presentation at the 20th international symposium entitled “Contemporary Science education,” held in Bremen (May 2010), it was suggested that several studies (Meijer 2003; 2005) indicate that inclusive classrooms do exist throughout Europe and the evidence also suggests that what is good for pupils with special educational needs (SEN), is good for all pupils. Our intention in the presentation was to enrich the debate about Science Education with a new catchword in educational circles; namely “Diversity.“

The idea of inclusion is based on the corresponding underlying values. In a dissertation project (Abels, 2010), we determined that reflective teachers do have an educational theory in mind, e.g. subject and competence orientation, meaningful lessons and solidarity, and additionally they act accordingly. This is consistent with Schön’s idea of reflection-on action and reflection-in-action (Schön 1983).

Inclusive education, in general, is usually discussed with respect to “Special Needs Education.“ In almost every country the concept of special educational needs is on the agenda and countries are currently struggling with the practical implementation. Unfortunately, several systems are used to educate pupils with disabilities as indicated in the most important and recent policy document - the United Nations Convention on Rights of People with Disabilities (2006). Regular schools with an inclusive orientation are seen as the most effective means of combating discriminatory attitudes.In this point the fulfilling of a democratic right obviously relates to classroom practice. All pupils, and thus also pupils with SEN improve with individualized classroom practice. The alternative didactic focus, on average, has paralyzed the educational system, e.g. in Germany.

Diversity, in the educational domain, means that learners are perceived to be different. Their difference serves as a resource for individual and mutual learning and development. Anne Sliwka’s (2010) sees diversity differences as an asset and opportunity. In her model, differences refer to issues of religions, linguistic and cultural backgrounds. By contrast to integration, where differences were seen as a challenge to be dealt with, inclusion is a diversity-related strategy for the educational system.

In addition to diagnostic and formative assessment, as well as personalized learning and individual support for learning, inclusive classrooms give a chance to be used as a resource for learning, not just in socio-emotional but also in cognitive terms for all pupils.

Finally “the success and failure of inclusive education depends on the strategies and practices that teachers in ordinary classrooms use in order to deal with a heterogeneous class with a variety of learners” (Meijer 2010).

This means (future) teachers need accordant competencies which should be developed in teacher education. Socio-moral learning processes, democracy-enhancing orientations, experience learning, normative argumentation processes are the significant key words facing into the direction of social development.

A project seminar in science education at the University of Hamburg, functioning as the research field of our study, wants to take students seriously, to put responsibility on them, to work with them

on the basis of their requirements and needs and to make it possible that they can experience the process of changing. Korthagen et al. (2002) call this the “realistic approach” (p. 13) of teacher training, which requires another kind of support by teacher trainers. The practical relevance of the training is stressed here, without using traditional education patterns, in which long lists of skills are often trained and conceptual knowledge is imparted. Practice must be permanently reflected, supported by an interaction between personal convictions and theory (Korthagen et al., 2002). Here we come from an extended understanding what learning is: comprehension-intensive learning, critical judgment and democratic action competence. There is no need for more learning material than there is today, but interdisciplinary competence is required that prepares the pupils for their “active participation in society” (Welz 2005, p. 179).

The attempt was made to enable such education processes, a professional development, for the students of the project seminar in science education at Hamburg University. They should experience a setting where they have the chance to relate theory and practice and reflect on their action on the theoretical basis. Moreover, all the theoretical aspects mentioned above were the latent structure of the professor running the seminar and at the same time the contents. Those contents functioned as an opportunity structure to gain competencies in teaching output- and subject-oriented meaningful lessons and in reflecting them afterwards. Therefore, the students experienced the whole activity framework of teaching. The task was to plan science lessons otherwise than in an input-oriented way. For this, they gathered educational theories, were sitting in on lessons, planned a double lesson in a small class, hold their lesson, evaluated it in a group and reflected on it alone in a written paper. Those papers showed different levels of reflection competence and thus different attitudes about the underlying values of teaching (Abels 2010).

The idea of inclusion is based on the same values underlying mentioned above. Reflecting and acting in this way inclusion seems more and more possible. “Development of possibilities for (in-service) teacher training and positive attitudes are challenges for the near future” (Meijer 2010).

References

Abels,S. (2010). Lehrerinnen und Lehrer als "Reflective Practitioner". Eine Studie über die Bedeutsamkeit von Reflexionskompetenz für die Umsetzung eines demokratieförderlichen Unterrichts.

Korthagen, F. A. J., Kessels, J., Koster, B., Lagerwerf, B., & Wubbels, T. (2002). *Schulwirklichkeit und Lehrerbildung: Reflexion der Lehrertätigkeit.* Hamburg: EB-Verlag.

Meijer, C. J. W. (2003). *Inclusive education and classroom practices.* Middelfart: European Agency for Development in Special Needs Education.

Meijer, C. J. W. (2005). *Inclusive education and classroom practice in Secondary Education.* Middelfart: European Agency for Development in Special Needs Education.

Schön, D. (1983). *The reflective practicioner: How professionals think in action.* New York: Basic Books.

Sliwka, A. (2010). From homogeneity to diversity in German education. In OECD (Hrsg.), *Educating Teachers for Diversity: Meeting the Challenge.* (S.205-216). Educational Research and Innovation, OECD Publishing.

United Nations. (2006). Convention on the Rights of Persons with Disabilities. http://www.un.org/disabilities/default.asp?id=259 .

Welz, E. (2005). Wir wollen's wissen. Schule bewegen! das BLK-Programm - "Demokratie lernen & leben". In Gerhard Himmelmann & Dirk Lange (Hrsg.), *Demokratiekompetenz. Beiträge aus Politikwissenschaft, Pädagogik und politischer Bildung.* (S.179-183). Wiesbaden: VS Verlag für Sozialwissenschaften.

5. STAN Annual Meeting

Jack Holbrook - Enhancing STL as a major focus for science teaching at school

By Ben Akpan, Executive Director, STAN

The President of ICASE, Professor Jack Holbrook, attended the 51st Annual conference of the Science Teachers Association of Nigeria (STAN) *which took place from 23 - 28 August, 2010 in Makurdi in central Nigeria. In a keynote address, Professor Holbrook made a case for enhancing STL (Scientific and Technological Literacy) as a major focus for science teaching at school. Following are excerpts from the lecture (the full text of the address is being prepared for publication in the next edition of the STAN Journal).*

The democratic argument for science education promoted through STL (scientific and technological literacy) is very different from the emphasis on scientific principles and concepts used in most textbooks. It considers the textbook approach as a major concern in striving towards intrinsic motivation of students for the learning of science in school. In STL, teaching students are definitely required to think (minds-on), but the depth of treatment reflects the 'need to know' required for the learning being promoted (there is no requirement that the whole of a topic, as expressed by the subject curriculum must be taught at any particular time, nor that it is approached in any given sequence). The inclusion of scientific principles and scientific concepts marks a strong demarcation between social science and natural science teaching and allows students to develop their personal and social capabilities and interaction skills within a strong science background. The social science/natural science demarcation is not made, as is often the case where teaching rigidly follows the textbook, by the inclusion of simple additional afterthoughts, or values education. Natural science education encompasses personal, social and nature of science learning as part of the student acquisition of the goals of education through STL teaching. Utilising students' intrinsic motivation is stressed as important for meaningful science learning by students. The transference of science from a decontextualised, non-society to a society setting for learning in science classrooms, is promoted as a further capability to enhance scientific literacy.

It is thus postulated that science education should be seen as:

- promoting the solving of problems, or reflecting on student concerns about aspects of their society that are considered relevant by them. Science education helps students, as members of society, to make justifiable decisions about issues and concerns by making use of science knowledge and ideas introduced on a 'need to know' basis, inter-linking this with other pertinent thinking from other discipline areas;
- more than simply relating science to society. The intention is seen as enhancing scientific literacy towards developing responsible citizens, able to play a full role in society (whatever career path is chosen), depending on their status, position and orientation. The science knowledge and understanding thus needs to prepare citizens able to appreciate science (and through this technology in society) and take appropriate actions with regard to issues and concerns in society. This view recognises that science education extends to determining, from a science point of view, the suitability of newspaper reports, positions taken in debates, or simple claims made by salesmen or advertisers
- portraying a balanced view of science, one in which it is recognised that science does not have all the answers (it is not the absolute truth and certainly unable to answer ethical or spiritual questions). Gaining an insight into the nature of science, as a way of appreciating the importance of science in our lives, recognising it is an important component of learning for all and illustrates the importance of logic, creative thinking, the need for reproducibility of data and conducting careful interpretation of observations with in the cultural setting.

6. Calendar of Events

The 23rd Asian Association for Biology Education will be held in Singapore, from 18-20 Oct, 2010, at the National Institute of Education, Singapore. The theme of the conference is: **Biology Education for Social and Sustainable Development**. The 3-day conference will have 6 plenary speakers, oral and poster presentations, country reports, a workshop on Problem Based Learning in Biology, and mid-and post-conference tours.

The conference is jointly organized by, the National Institute of Education, the Asian Association for Biology Education, Singapore Institute of Biology, and Science Teachers Association for Singapore.

The website for the conference is http://www.nsse.nie.edu.sg/aabe2010/

IOSTE

International Organization for Science and Technology Education

Mini-symposium, Reading, 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

Welcome to Science Singapore 2011

The Future of Science Education

22-24 July 2011

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/

Namkelekile e Afrika You are welcome in Africa

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.*

Accommodation Rates
The 6SCWC Congress Secretariat has selected a range of hotels for delegates to choose from and has negotiated guaranteed rates. Delegates can reserve accommodation at one of the designated congress hotels when completing the registration form..

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

7. ICASE Executive Committee 2008-2011

Based on the ICASE constitution, the ICASE Management committee as well as Regional Representatives are elected by member organisations. These elected members, in turn, nominate chairs of relevant standing committees. Together these persons form the ICASE Executive Committee and are the persons who make decisions on behalf of the ICASE Governing Body. The ICASE Governing Body is the **ICASE member organisations**.

The Executive Committee **(the decision making body working under the Governing Body)**

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