
International Association for Statistical Education



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7th International Conference on Teaching Statistics

Salvador, Bahia, Brazil, 2-7 July 2006

Working Cooperatively in Statistics Education

Gilberte Schuyten (President IASE), Carmen Batanero (IPC
Chair),

Lisbeth Cordani (LOC)

<http://www.stat.auckland.ac.nz/~iase/index.php>



The International Conferences on Teaching Statistics (ICOTS) are the most important means of interchange that the International Association for Statistical Education (IASE) offers to the community of professionals and researchers concerned with statistics education. ICOTS history started 24 years ago when the Education Committee of the

International Statistical Institute (ISI) decided to hold an International Conference on Teaching Statistics. The success of ICOTS-1 (1982, Sheffield, UK), ICOTS-2 (1986, Victoria, Canada), ICOTS-3 (1990, Dunedin, New Zealand) demonstrated that statistics teachers felt a strong need to unite, talk and discuss the problems experienced in the course of their daily activities. In the meantime, it gave specialists in statistics, psychology and statistics education a forum to present the results of their research. Since the creation in 1991 of IASE as a Section of the ISI, IASE continued organising ICOTS every four year (ICOTS-4, 1994, Marrakech, Morocco; ICOTS-5, 1998, Singapore; ICOTS-6, 2002, Cape Town, South Africa).

ICOTS-7 'Working Cooperatively in Statistics Education' is the first ICOTS Conference on the South American continent. It was attended by a total of 520 delegates from 55 countries. It was organised in collaboration with the Brazilian Statistical Association (ABE) with support by the American Statistical Association and other institutions (see list on the ICOTS-7 web page).

The high number of Latin American delegates (over 170) reflects the mature state of statistics education in Latin America. Their participation was stimulated by reducing the fees for these delegates and by running some activities in Spanish and Portuguese.

The Conference was a great success thanks to the excellent work by the International Programme Committee and, in particular, by the efforts of Carmen Batanero, Susan Starkings, Lisbeth Cordani, John Harraway and John Shanks, as well as all Topic Organisers and Organisers of contributed papers and of posters. The efficient local organisation and hospitality by Pedro Morettin, Lisbeth Cordani, Pedro Silva, Clelia Tolo, Gilenio Borges, Wilton Bussab and their team, as well as the warm atmosphere and natural beauty of Salvador, resulted in an excellent Conference. Two main results are the beautiful web page managed by John Shanks and the ICOTS-7 Proceedings CD-ROM edited by Allan Rossman and Beth Chance with over 350 papers and 120 posters abstracts. The ICOTS-7 Proceedings will soon be freely accessible via the IASE website on the IASE publication page.

Special Interest Groups of Latin American educators started working one year before ICOTS-7 via Internet forums and met twice during the Conference: SIG1 'Training Mathematics teachers to teach Statistics in Spanish and Portuguese speaking countries', SIG 2 'Young Latin American researchers in Statistics education' and SIG 4 'Curricular development in Statistics education in Latin America'. Also the exhibition of concrete models in mathematics and statistics of the 'Laboratório de Ensino de Matemática' coordinated by Elinalva Vasconcelos attracted many delegates. Special sessions and administrative meetings completed the Programme. In one of these special sessions, the forthcoming ICMI /IASE Study Conference to be held in Monterrey, Mexico, June 30-July 4, 2008, organised in collaboration with ICMI, the International Commission on Mathematical Instruction, was announced. Also, several activities of the IASE journal *Statistics Education Research Journal* (SERJ) were organised by the SERJ Editor Iddo Gal. Two workshops were run: one for current and new referees and the other for prospective authors. In the panel 'Statistics Education Journals: Cooperating not competing', the Editors of SERJ, *Teaching Statistics and Journal Statistics Education* (JSE) discussed how to join efforts.

The theme 'Working Cooperatively' has many faces. International cooperation was clearly emphasised in sessions under topic 1 'Working cooperatively in Statistics education', topic 9 'An international perspective on Statistics Education' and in other invited paper sessions. Also, in the seven plenary

lectures, speakers enlightened different aspects of 'working cooperatively'. Statistics education is indeed based on many different disciplines such as statistics, education, mathematics education, psychology, sociology, philosophy which makes interdisciplinary cooperation for research beneficial for the advancement of statistics education research. Recent trends in teaching-learning theories emphasize the role of student activity and social interaction in learning. Cooperative learning is said to stimulate depth of understanding, acquisition of problem-solving skills and formation of positive attitudes toward the subject being taught. The traditional model of teaching as a 'transmission' is changing into a 'transformation' model of learning.

Following the example of ICOTS-6 in South Africa, where teacher training activities were for the first time organised as a separate stream throughout ICOTS, the Local Organising Committee and in particular Lisbeth Cordani, Lilia Carolina Costa and 20 lecturers and observers organised a series of workshops attended by 60 local school teachers. The active approach of these activities was highly appreciated by the participants and they are looking forward for more. All this was possible thanks to financial support by the American Statistical Association and local support by the Universidade Federal da Bahia and the Instituto Anisio Teixeira. By supporting these local workshops, IASE aims to stimulate statistics education in that part of the world where the conference takes place and aims to attract people to research in statistics education.

During twenty four years of continuous critical work and progress in the field of statistics education, the ICOTS Conferences have provided international fora for those involved in statistics education to exchange their ideas and to present their research and experiences in teaching statistics. This effort is reflected in the seven volumes of ICOTS Proceedings, which now constitute a valuable contribution to statistics education as a research discipline and a desired reference for teachers and researchers. In order to enhance the quality of the papers, the International Programme Committee organised, from ICOTS-6 onwards, a refereeing option for people submitting a paper. The papers presented in the ICOTS-7 Proceedings are the product of the effort of more than 500 educators, statisticians, psychologists, researchers and lecturers. The more than 220 invited papers of the Conference aim to present a synthesis of the main tendencies and developments in statistics education. They have been organised around the following 9 main topics: Working cooperatively in Statistics education, Statistics education at school level, Statistics education at the post-secondary level, Statistics education/training and the workplace, Statistics education and the wider society, Research in Statistics education, Technology in Statistics education, Other determinants & developments in Statistics education, An international perspective on Statistics education. The Proceedings are completed with keynote lectures, about 110 Contributed Papers and about 120 summaries of Posters.

A conference like ICOTS only can happen because of the commitment of a large number of people from around the world who are prepared to freely give much time and effort. We would like to pay tribute to the great support we received from so many people who helped in making the conference such a success.

After having ICOTS Conferences on different continents, next ICOTS-8 will return to Europe where it started in 1982; this

time in Slovenia in 2010 at Ljubljana. Please already note the dates in your diary: July 11-16, 2010, we are looking forward to meet you there!

Visit our website at
<http://www.stat.auckland.ac.nz/~iase/index.php>

ICOTS-8, Slovenia, 2010

The theme of the ICOTS-8 Conference will be 'Data and context in statistics education: Towards an evidence-based society.' The venue and dates are now set: Cankarjev Dom Cultural & Congress Centre (<http://www.cd-cc.si>), Ljubljana, Slovenia, Sunday, July 11–Friday, July 16, 2010.

Andrej Blejec had made the initial proposal and arrangements, and these have now been accepted by the IASE Executive Committee.

Appointments for ICOTS-8 IPC and LOC:

- LOC Chair: Andrej Blejec
- IPC Chair: John Harraway
- Programme Chair: Roxy Peck
- Information Manager: John Shanks
- Scientific Secretary: Helen MacGillivray
- Editor Proceedings: Allan McLean

ICOTS-9 in 2014

At a meeting at ICOTS-7 with IASE Executive Members, an expression of interest was received from a Chinese delegation to hold the ICOTS-9 Conference in China in 2014.

Contributed by Gilberte Schuyten

IASE Conferences

- IASE Satellite on Assessing Student Learning in Statistics, 19-21 August 2007, Guimarães, Portugal. Brian Phillips is initial contact. (BPhillips@swin.edu.au)
- IASE sessions at ISI-56, August 22-29, 2007, Lisboa, Portugal. Allan Rossman is initial contact. (arossman@calpoly.edu)
- IASE 2008 Round Table Conference. Carman Batanero is initial contact. (batanero@ugr.es)
- ICOTS-8, 2010: July 11-16, Ljubljana, Slovenia. Andrej Blejec is initial contact. (Andrej.Blejec@nib.si)
- IASE sessions at ISI-57, 2009, Durban. Helen MacGillivray is initial contact. (h.macgillivray@qut.edu.au)
- IASE activities at International Conference on Applied Statistics for Development in Africa - SADA'07, February 26th-March 2nd, 2007, Cotonou, Benin. (<http://lma.univ-pau.fr/meet/sada2007/>)

STEPS Statistics Education PhD Student Network

STEPS will be launched soon; it will be the first international online community that will connect students undertaking doctoral work in statistics education. The address is: <http://www.stat.auckland.ac.nz/~step/>.

Contributed by Chris Reading

SRTL-5

The Fifth International Research Forum on Statistical Reasoning, Thinking, and Literacy

The University of Warwick, Coventry, UK, August 11-17, 2007

Reasoning about Statistical Inference: Innovative Ways of Connecting Chance and Data

The Forum's focus will be on informal ideas of inference rather than on formal methods of estimation and tests of significance.

This topic is emerging from the presentations and discussions at SRTL-3 and 4 and is a topic of current interest to many researchers as well as teachers of statistics. As new courses and curricula are developed, a greater role for informal types of statistical inference is anticipated, introduced early, revisited often, and developed through use of simulation and technological tools. We encourage research papers that address reasoning about statistical inference at all levels of education, including the professional development of elementary and secondary teachers.

We encourage submission of research papers that address questions such as the following:

4. What are the simplest forms of statistical inference that students can understand?
5. How does reasoning about statistical inference develop from the simplest forms (informal) to the more complex ones (formal)?
6. How can instructional tasks and technological tools be used to promote the understanding of statistical inference?
7. What are sequences of activities that can help student develop a conceptual understanding of statistical inference?
8. What types of misconceptions are found in students' reasoning about statistical inference?
9. What types of foundational knowledge and reasoning are needed for students to understand and reason about statistical inference?
10. How do students develop an understanding of the language used in describing statistical inference (e.g., significance, confidence)?
11. How does an understanding of statistical inference connect and effect understanding of other statistical concepts?
12. What are useful items and questions to use to assess understanding of statistical inference?

The local SRTL-5 Organisers:

Janet Ainley, janet.ainley@warwick.ac.uk

Dave Pratt, dave.pratt@warwick.ac.uk

SRTL-5 Website: <http://srtl.stat.auckland.ac.nz/>

Contributed by Dani Ben-Zvi

IASE Activities at the 56th Session of the ISI

IASE organises several sessions at the 56th Session of the ISI, to be held in Lisbon from 22-29 August 2007:

- Research on Reasoning about Distribution, Joan Garfield
- How modern technologies have changed the curriculum in introductory courses, Lucette Carter
- Preparing Teachers of Statistics, Allan Rossman
- Research on the Use of Simulation in Teaching Statistics and Probability, Rolf Biehler
- Optimising Internet-based Resources for Teaching Statistics, Ginger Holmes Rowell
- Observational Studies, Confounding and Multivariate Thinking, Milo Schield
- Teaching of Official Statistics, Sharleen Forbes
- Teaching of Survey Statistics, Steve Heeringa
- Studying Variability through Sports Phenomena, TBD
- Use of Symbolic Computing Systems in Teaching Statistics, Zaven Karian

IASE Organising Committee:

Allan J. Rossman (USA) arossman@calpoly.edu

Gilberte Schuyten (Belgium) gilberte.schuyten@UGent.be

Chris Wild (New Zealand) c.wild@auckland.ac.nz

For more information, visit the ISI-56 website at <http://www.isi2007.com.pt/> or contact members of the OC.

Contributed by Allan J. Rossman

IASE Satellite Conference on Assessing Student Learning in Statistics

(Prior to ISI-56 Lisboa 2007, Guimaraes, Portugal)

Conference Committee:

- Brian Phillips (Australia) (Joint Chair and Joint Chief Editor) bphillips@swin.edu.au
- Beth Chance (USA) (Joint Chair) bchance@calpoly.edu
- Allan Rossman (USA) arossman@calpoly.edu
- Ginger Rowell (USA) rowell@mts.edu
- Gilberte Schuyten (Belgium) gilberte.schuyten@UGent.be
- Larry Weldon (Canada) (Joint Chief Editor) weldon@sfu.ca

Local Organiser:

Bruno C. de Sousa (Portugal) bruno@mct.uminho.pt

Theme

This Satellite Conference invites papers on all aspects of assessing student learning in statistics. For example, we expect to have papers on writing effective exam questions, on exam implementation strategies, and on alternative assessment methods such as projects, lab assignments, and writing assignments. We also encourage submissions on how to use assessment to improve student learning, and on developing and administering assessment items to conduct research into student learning. Proceedings will be available free on the publication page of IASE.

Contributed by Brian Phillips

International Statistical Literacy Project

In order to improve the usefulness of the ISLP web pages, we are conducting a survey of users and potential users of these web pages. If you have not yet filled out this (anonymous) survey, please go to <http://course1.winona.edu/cblumberg/survey.htm>.

For those unfamiliar with the ISLP, its mission is to provide those interested in statistical literacy with information and resources, and to aid them in the development of statistical literacy around the world. Presently, the major focus has been on web pages that list these resources in useful groupings. For each resource, a few sentences are given that describe that item, and complete access or ordering information is given. The emphasis is on items available for free on the Internet.

As you may be aware, the web pages of the International Statistical Literacy Project have been on the Internet for three years now. So, several of the page coordinators have decided to step down. Hence, we are seeking new page coordinators or co-coordinators for several of the pages. In particular, coordinators or co-coordinators are needed for the General Resources, Primary Level, Secondary Level, Adult Learner, Teacher Training, and Journalists and other Mass Media web

pages. To explore these pages and the other pages of the website, go to
<http://course1.winona.edu/cblumberg/islplist.htm>.

We would like to expand the material on the web page (<http://course1.winona.edu/cblumberg/islpart.htm>) that has publicly available newspaper and Internet articles and reports (both good and bad) that can be used when teaching statistics. If you have any good articles or reports (especially from countries other than the USA), please submit the articles along with an approximately 3- to 5-sentence paragraph of how they can be used when training teachers to Eunice Goldberg at egoldberg@nl.edu. Make sure to include a complete reference to where the article is located and, if possible, information on who needs to be contacted to get permission to reproduce the article on our website.

Finally, the website mostly contains resources in English. If you know of any applicable resources in a language other than English, please send me (at cblumberg@winona.edu; Fax: +1-507-457-5376) a description of the item in the language of publication. Also, include an English translation of the description. Descriptions of items in English are also welcome and can be sent either to me or to the appropriate page coordinator.
(<http://course1.winona.edu/cblumberg/islpcord.htm>).
Please feel free to contact me directly, or by using the (<http://course1.winona.edu/cblumberg/survey.htm>) survey form, with any suggestions that you have for the ISLP and its web pages.

Contributed by Carol Joyce Blumberg

IASE Web Page

Visit the IASE web page: <http://www.stat.auckland.ac.nz/~iase/>
It is a valuable resource of statistics education information. In past few months, the web page has become richer for the extensive list of links and publications. The "Links" section provides links categorised in several groups: Research, Learning, Assessment, Curriculum Guidelines, Bibliographies, Discussion lists, Indexes and Abstracting Services, Major Journals, Other Journals, Newsletters, Publishers, Datasets, Java Applets, Software, Statistical Calculators, Organisations, International Agencies and Non-Profit Organisations. Each group provides links to interesting and useful pages for statistics educators and researchers. The other interesting link is the "Publications" section with a list of IASE past publications and links to many other sites. Of special interest are the Dissertations in Stats Ed section. IASE is beginning to build what we intend to become a comprehensive archive of doctoral dissertations in Statistics Education. We have to thank Chris Wild for the careful updating and maintenance of the IASE web pages.

Contributed by the Editors

CERME 5: Group 5 Stochastic Thinking (Research on probabilistic and statistical thinking)

The Fifth Conference of the European Society for Research in Mathematics Education (CERME) is a conference organised by the European Society for Research in Education, and is designed to foster a communicative spirit. It deliberately and distinctively moves away from research presentations by individuals towards collaborative group work. Its main feature is to be a number of thematic groups whose members will work

together in a common research area. This message refers to one, Group 5, of 15 such groups.

We will have 12 hours over four days in which to meet and progress our work on stochastic thinking. Submitted papers will be peer-reviewed by reviewers, as far as possible chosen from the group of participants in Group 5. The process will NOT be a blind review. If you submit a paper to Group 5, you are likely to be asked to review one or more papers. Please indicate when submitting a paper if you think this is inappropriate. All accepted papers will be published on the Internet and made available to participants in the group to read before the Conference. The group leaders will organise activity and discussion in the Conference around issues raised by the papers.

For more details about CERME 5, see
<http://www.cyprusisland.com/cerme/>.

The Organisers for Group 5 invite research-based papers on stochastic thinking, including probability, statistics and the interface between these domains. We will be particularly interested in theoretical, empirical or developmental papers that address one or more of the following themes (though any papers of relevance to the overall focus of the group will also be considered):

The nature and development of stochastic thinking and its relationship to other types of mathematical thinking, including the interface between probabilistic and statistical thinking, such as in modelling or data exploration.

The relationship between stochastic thinking and external factors such as teaching methodologies, tools, tasks and setting.

The role of computer-based tools, including microworlds, on stochastic thinking.

The elaboration of theoretical frameworks that may provide insightful models for interpreting evidence from research on stochastic thinking.

We wish to encourage papers from researchers worldwide. Papers for Group 5 on Stochastic Thinking should be submitted electronically by October 10th, 2006, to Rolf Biehler (biehler@mathematik.uni-kassel.de), together with the submission form. The submission form has to be sent to the Conference Secretary (cerme5@ucy.ac.cy) as well. This form and further details of format for papers are given on the CERME 5 website (see above for URL). If you have further questions, please contact any of the leaders of the group (e-mail addresses are given below). Rolf Biehler (Group 5 Coordinator) biehler@mathematik.uni-kassel.de, Maria Meletiou-Mavrotheris meletiu@spidernet.com.cy, Maria-Gabriella Ottaviani mariagabriella.ottaviani@uniroma1.it, Dave Pratt dave.pratt@warwick.ac.uk.

Contributed by Rolf Biehler

Call for Nominations: Director of the International Statistical Literacy Project

The International Association for Statistical Education (IASE) is starting a search for the Director for the International Statistical Literacy Project. The Director will serve a four-year term starting Jan 1, 2007, replacing Carol Joyce Blumberg who has recently resigned from the role. (The previous job title was "Coordinator")

About the International Statistical Literacy Project:

The International Statistical Literacy Project (ISLP) is an IASE project with a mission of providing those interested in statistical literacy with information and resources and to aid them in the development of statistical literacy around the world. To date the main focus of the project has been on the development of a series of webpages providing users with resources that are useful for the development of statistical literacy at all levels from Primary/Elementary School through Adult Learners. There are also webpages for official statisticians and for journalists and the mass media. Further, there are webpages devoted statistical literacy projects, websites, etc. that have been developed by national statistical offices, national statistical societies, and other non-profit organizations.

A listing of these webpages is at

<http://course1.winona.edu/cblumberg/islplist.htm>.

The webpages have been developed by Page Coordinators who are experts in statistical literacy. A listing of Advisory Committee members is at

<http://course1.winona.edu/cblumberg/islpadvis.htm> and Page Coordinators at <http://course1.winona.edu/cblumberg/islpcoord.htm>.

The Director's role

With Carol Joyce Blumberg's retirement from Winona State University it is envisaged that the web pages will be moved to the main IASE website at the University of Auckland which will take care of most of the hands-on website development with ongoing page-updating performed, wherever possible, by the Page Coordinators themselves.

The ISLP Director's role will be one of leadership, management and facilitation. The Director will be responsible for formulating a vision for future directions for the project and maintaining the advances that have already been made. The Director will re-evaluate ISLP aims in consultation with the

Advisory Committee and the IASE Executive, foster the initiation of new pages and find new Page Coordinators, manage turnover of existing Page Coordinators, feed ideas to Page Coordinators, lead decision-making processes about the overall design and structure of the ISLP site, oversee the progress being made by pages, lead promotion of the ISLP and coordinate with related sites. The Director will also communicate regularly with and chair meetings of the ISLP Advisory Committee at major conferences such as ICOTS and ISI Sessions, and ensure that Page Coordinators who do not have the technical skills to update their own pages get the support they need.

Overall, IASE sees the ISLP initiative as a strategically important project for statistics education worldwide and expects the Director to help ISLP gain international visibility and prominence. As with all other IASE leadership roles this is a voluntary (unpaid) professional-service role.

The search process and how to make nominations:

IASE encourages both self-nominations from interested individuals and nominations of suitable candidates. All nominations and self-nominations will be considered by the Search Committee, which can also propose additional nominees. Candidates or self-nominees will be asked to prepare a brief statement describing their vision for ISLP and how they might go about discharging the responsibilities above, along with a statement of their qualifications for the position, and an academic vita or professional resumé. Candidates might also be asked to respond to additional questions by the search committee.

For more information about the search process, or to submit a nomination, please contact the Chair of the Search Committee, Chris Wild, (U. of Auckland. NZ): [<c.wild@auckland.ac.nz>](mailto:c.wild@auckland.ac.nz). Nominations should be submitted by 15 October 2006.