

Welcome to the Proceedings of the IASE ICOTS-7 on “Working Cooperatively in Statistics Education”

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The International Conferences on Teaching Statistics (ICOTS) are the most important means of interchange that the IASE offers to the community of professionals and researchers concerned with statistics education.

ICOTS history started 24 years ago when the Education Committee of 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.

At the open meeting held to discuss a new ISI section on statistical education at the close of the ICOTS-3 Conference in Dunedin, New Zealand, in 1990, it was clear that an international association for statistics education would inevitably come into existence. This discussion resulted in 1991 in the creation of IASE as a section of ISI. Since then IASE continued organizing ICOTS every four years (ICOTS-4, 1994, Marrakech, Morocco; ICOTS-5, 1998, Singapore; ICOTS-6, 2002, Cape Town, South Africa).

A lot has changed in the Proceedings since 1982, not only in delivery mode but also in content. The proceedings of ICOTS-5 and ICOTS-6 are freely accessible at the [IASE website](#) and this will also be the case for the Proceedings of ICOTS-7. Past president Gabriella Ottaviani performed a textual analysis on the titles of ICOTS papers in the Proceedings from 1982 to 2002 (Ottaviani, 2002) and concluded that, “from an academic beginning due to its strong link with university professors, the conferences moved to dealing with teaching/learning problems and came to enlightening students’ problems and their performance. In more recent years, the proposal of instructional models suitable for statistics and probability, and the necessity to assess students have enhanced the interest of ICOTS attendants towards research. Consequently the next step to develop might be reflecting on what the statisticians and the statistics education researchers have to offer and to learn from each other as part of a ‘sole’ community”.

And here we are at the theme of ICOTS-7: Working Cooperatively in Statistics Education. Working cooperatively has many faces. Cooperation refers not only to cooperation between institutes, researchers, teachers, nations, teacher and researcher, statistician and statistics educator, disciplines, methodological approaches... but also to students working together.

International cooperation is clearly emphasized in sessions under topic 1 ‘Working cooperatively in Statistics education’ and topic 9 ‘An international perspective on Statistics Education. Also in the seven plenary lectures, speakers enlighten different aspects of ‘working cooperatively’. Statistics education is based on many different disciplines such as statistics, education, psychology which makes interdisciplinary cooperation for research beneficial for the advancement of statistics education research. One of the tenets of statistics education is the use of real life data, which is said to motivate students and make statistics learning more enjoyable. Cooperation of statistics teachers with researchers in different disciplines and statistical agencies helps in providing suitable data sets.

But let us turn to the ‘working cooperatively’ between students. 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. Other terms are used as well in conjunction with cooperative learning. These include collaborative learning (more connected to constructivism), team learning, problem-based learning, discussion groups (off line or on line synchronous or asynchronous), and lab work ... The traditional model of teaching as a ‘transmission’ is changing into a ‘transformation’ model of learning. This shift in focus requires also new types of assessment.

Following the suggestion of the IPC Executive of ICOTS-7, the Local Organizing Committee and in particular Lisbeth Cordani succeeded in organizing a series of events to reach out the local school teachers. These teacher training activities were for the first time organized at ICOTS-6 in South Africa and were held as a separate stream throughout ICOTS. By supporting these local workshops IASE aims to stimulate statistics education in that part of the world 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 organized onwards ICOTS-6 a refereeing option for people submitting a paper. This is done with the participation of specialists from different countries and with different majors.

As president of IASE, I am happy to present to you the Proceedings of ICOTS-7.

The papers presented in these proceedings are the product of the effort of more than 400 educators, statisticians, psychologists, researchers and lecturers. The more than 200 invited papers of the conference, which were planned well in advance, aimed to present a synthesis of the main tendencies and developments in statistics education. They have been organized 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 about 110 Contributed Papers and about 120 summaries of Posters.

Planning an ICOTS conference is a long process which usually starts just after the previous ICOTS has been held, and in which many different people are involved, including the ICOTS International Programme Committee, and the Local Organisation Committee, IASE past and current Executive Committees, ISI officers, the Sessions Organisers and Topic Convenors, speakers, referees and organisers of special sessions, demonstrations, or other activities. On behalf the IASE, I would like to express our gratitude to all of them, and in particular to those who were more heavily involved with the conference works: the members of the IPC Executive Carmen Batanero (Chair), Susan Starkings (Programme Chair), Allan Rossman and Beth Chance (Editors of Proceedings), John Harraway (Scientific Secretary), John Shanks (Web Master IPC webpage <http://www.maths.otago.ac.nz/icots7/>) and Lisbeth Cordani (Local organisers representative); the local organisers Pedro Alberto Morettin, (Chair); Wilton de Oliveira Bussab, Lisbeth K. Cordani (IPC representative), Gilênio Borges Fernandes, Pedro Silva and Clélia Maria C. Toloi.

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