

## THE IASE - BACKGROUND, ACTIVITIES AND FUTURE

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*Since its formation in 1993, the International Association for Statistical Education, IASE, has become a very active international organisation which aims to advance statistical education at all levels, from primary school through training of professionals as well as to the general public. From 1949 the Committee on Statistical Education within the International Statistical Institute, ISI, promoted the university training of Statisticians at an international level while in developing countries the ISI concerned itself with the education of official statisticians. From the mid 1970's the ISI began to pay more attention to the teaching of statistics at all levels. Since the IASE became a section of the ISI in 1993 it has been responsible for the organisation of all statistical education activities run by the ISI. These include a research group, a range of international meetings, regular publications and a comprehensive website.*

### WHAT IS THE IASE?

The International Association for Statistical Education (IASE) is a section of the International Statistical Institute (ISI) and is the main international association devoted to improve and extend statistical education throughout the world at all educational levels. It has a three-fold role: as a professional organisation, providing a forum for those concerned with statistical education; as an organisation for research into statistical education as a discipline in its own right; and as the education arm of the ISI, taking the lead in, and responding to, issues in statistical education and training, and supporting and promoting statistical education, especially in developing and transition countries.

In carrying out these roles, the IASE encourages a variety of activities which include: research to extend knowledge in the teaching and learning of statistics, advancing the academic recognition of the discipline, improving the practice of education, establishing an international network for exchange of ideas, providing opportunities for members to meet and discuss matters of common interest at meetings on a regular basis and producing a series of publications concerned with statistical education. Details of the activities of the IASE and up to date activities can be found on the IASE web site <http://www.cbs.nl/isi/iase.htm>.

### THE DEVELOPMENT OF THE IASE

The formation of the IASE was the culmination of a process starting in 1949 with the founding of the Committee on Statistical Education within the ISI through which the Institute itself promoted the university training of Statisticians at international level while in developing countries the ISI concerned itself with the education of official statisticians. One notable example was the founding of the International Statistics Education Centre in India, ISEC, see Berze (2002).

Through the period 1948 to 1991 a number of distinguished statisticians from a cross section of countries chaired the ISI Education Committee. These were: 1948-1954, S.A. Rice (USA); 1954-1960, P.C. Mahalanobis (India); 1960-1963, H.O.A. Wold (Sweden); 1963-1969, G.M. Cox (UK); 1969-1973, J. Durbin (UK); 1973-1977, G. Goudswaard (The Netherlands); 1977-1979, A.E. Sarhan (Egypt); 1979-1987, J.M. Gani, (Australia); 1987-1991 D. Vere-Jones (New Zealand).

From the mid 1970's the ISI paid more attention to teaching statistics in schools. During those years, mainly in developed countries, the teaching of mathematics in schools began to change, so that statistics and probability started to find a place within the mathematics programme in pre-university schools, and statisticians became conscious of the necessity to go deeper into the teaching/learning problems that teachers of mathematics had to face when dealing with teaching statistics in schools, (Vere-Jones, 1995).

In 1976, the ISI re-emphasised its propositions for statistics teaching, recognising that the theme of teaching could offer the best possibility of influencing the future development of

statistics. From 1979-1987, the Education Committee, chaired by Professor Joe Gani, created diverse "Taskforces". These included: Teaching statistics at school level, chaired by Peter Holmes, giving rise to, among other things the journal, *Teaching Statistics*; International Conferences on Teaching Statistics, chaired by Lennart Rade; and Teaching of Statistics around the World, chaired by Vic Barnett, see Barnett (1982).

This increased interest in statistics education led to pressure to develop a new section of the ISI devoted to statistics education issues at an international level. David Vere Jones (New Zealand), Joe Gani (Australia) and Lennart Rade (Sweden) were the main proponents for this development.

At the incoming Council of the ISI, September 1991, Cairo, Egypt, it was unanimously agreed to set up an Interim Committee for the new organisation with the responsibility for establishing the new section. With the IASE established the statistical education activities of the ISI were transferred to it and the Education Committee ceased to function as such.

David Vere-Jones paper *The Coming of Age of Statistical Education* (1995) gives a most comprehensive account of the developments in statistical education since the setting up of the ISI Education Committee in 1949. Anyone interested in statistical education should read this paper which not only gives a wonderful historical record of the formation of the IASE, but also gives a much broader picture of how statistics has evolved and reflects the thinking of those involved and the changing role of statistics in the education of most people. Others have also written on these developments, for example Ottaviani (1998, 1999), Ottaviani, & Batanero, 1999 and Berze (2002). Phillips (2001) has a comprehensive account of David Vere-Jone's influence on statistical education which includes some insight into the development of statistics education over the past 40 years, including the development of the IASE.

The organisation got off to a great start with the First Scientific Meeting of the IASE in 1993, Perugia, Italy under the direction of David Vere-Jones, Giuseppe Cicchitelli and Lina Brunelli, (Brunelli & Cicchitelli, 1994). Some 150 delegates attended the meeting including a group of Italian teachers. The first IASE Executive meeting was held during the Florence session of the ISI in 1993. An executive consisting of President, President Elect and five vice presidents, each from a different country, are elected every two years to run the affairs of the association. In its first ten years, the five IASE presidents came from different countries, each bringing a slightly different emphasis and expertise to the organisation. They are David Moore (USA), 1993 - 1995; Anne Hawkins (UK), 1995 - 1997; Maria-Gabriella Ottaviani (Italy), 1997 - 1999; Brian Phillips (Australia), 1999 - 2001; Carmen Batanero (Spain), 2001 - 2003. Details of all the IASE Executives are given on the IASE web site.



From left to right:

Brian Phillips, Australia ( 1999-2001)  
 Carmen Batanero, Spain (2001-2003)  
 Maria-Gabriella Ottaviani, Italy (1997-1999)  
 David Moore, USA (1993-1995)  
 Insert: Anne Hawkins, UK (1995 - 1997)

#### MEETINGS ORGANISED BY THE IASE

The major events the IASE organises are the International Conferences on Teaching Statistics, ICOTS, which are held every fourth year and cover all aspects of statistical education. They have been held since 1982, initially under the ISI Committee on Statistical Education, when ICOTS-1 was held in Sheffield, UK, followed by ICOTS-2 (1986) in Victoria, Canada; ICOTS-3

(1990) in Dunedin, New Zealand; ICOTS-4 (1994) in Marrakech, Morocco; ICOTS-5 (1998) in Singapore and ICOTS-6 (2002) in Durban, South Africa. The major aim of ICOTS meetings is to provide the opportunity for people from around the world who are involved in statistics education to exchange ideas and experiences, to discuss the latest developments in teaching statistics and to expand their network of statistical educators. Another major event the IASE organises is the Round Table Conference, held every four years, which concentrates on a particular research topic. The recent meetings have been in 1996, Granada, Spain on the topic *Research on the Role of Technology in Teaching and Learning Statistics* and in 2000, Tokyo, Japan, on the *Training Researchers in the Use of Statistics*. Proceedings from these meetings are available for each of these conferences from the ISI office, for example Pereira-Mendoza, Lim Seu Kea, Tang Wee Kee, and Wing-Keung Wong (1998) and Batanero (2001).

Meetings on statistics education are also organised by the IASE within the ISI Biennial Sessions. Recent examples have been in Helsinki, Finland (1999), Seoul, Korea (2001), and the next will be held in Berlin, Germany (2003). These sessions provide an opportunity to reach out to a wider audience of statisticians who are attending the large ISI conferences compared to those who are mainly concerned with statistics education who attend the specialist conferences organised by the IASE. There is also a growing interest in the International Research Forum, which is associated with the IASE, on *Statistical Reasoning, Thinking, and Literacy*, SRTL. SRTL-1 was held in Israel in 1999 and SRTL-2 in Australia in 2001, for more details see <http://www.beeri.org.il/srtl/>. Furthermore, the IASE runs other ad hoc satellite meetings associated with both the ISI and ICME meetings and other conferences concerned with the teaching of statistics. As well as these major meetings, the IASE also organises the statistical education sessions at the International Conference on Mathematical Education, ICME, held every four years. In 1996, ICME-8 was in Seville, Spain, in 2000, ICME-9 was in Tokyo, Japan and in 2004, ICME10 will be in Copenhagen, Denmark. With this wide range of events, there is the opportunity for statistics educators to meet at least once per year at international meetings both to share their experiences and learn about the latest developments and research in the discipline.

#### RESEARCH IN STATISTICAL EDUCATION

One of the roles of the IASE is to spread the findings of statistical education research in order that all statisticians may become familiar with the full potential of statistics as a discipline. With this objective in mind, the Statistical Education Research Group, SERG, was formed as a special interest group within the IASE and is open to all who share a common interest in carrying out research on the teaching and learning of statistics and probability. The main activity of this group in the past few years has been the production of the SERN newsletter, three times per year, copies located at [www.ugr.es/local/batanero/sergroup.htm](http://www.ugr.es/local/batanero/sergroup.htm). This continued the work of the International Study Group for Research on Learning Probability and Statistics, which was formed at ICOTS-1. The aim has been to make SERN a tool of potential interest to researchers, and, therefore has included short notes, summaries of papers, dissertations and research works, information about internet resources of interest, past and future conferences and bibliographies on particular research topics. In 2002 the group is working towards a Statistics Education Research Journal (SERJ) with 2 issues a year. Members of the Research Group meet at the International Conferences on Teaching Statistics, and at other ISI and IASE Conferences. There is also an increasing presence of members interested in research in statistics education at conferences such as the Psychology of Mathematics Education (PME) and American Educational Research Association (AERA) meetings.

#### STATISTICAL LITERACY

A major focus of IASE meetings currently is on the issue of statistical literacy. As mentioned on the ICOTS6 web site <http://www.beeri.org.il/icots6/>, the term "*statistics literacy*" does not have a single accepted meaning, but in general refers to people's ability to interpret, critically evaluate, and communicate statistical information, and to data-related claims, or chance-related phenomena which they may encounter in diverse life contexts.

Some level of statistics literacy is increasingly seen as desirable not only from all school or university graduates, but also of all adults, regardless of their educational and personal

backgrounds. It relates to a set of basic skills, understandings, and dispositions, that all citizens need to be critical consumers of quantitative information in the world around them such as being able to interpret graphs and tables, being able to read and make sense of statistics in the news, media polls, etc.

Specific statistical literacy activities organised by the IASE include the IASE Satellite Conference on Statistical Literacy held in Seoul, Korea, August, 2001, which immediately preceded the ISI session in Seoul and gave the opportunity for people to enjoy presentations given by people who have a special interest in statistical literacy. See <http://www.swin.edu.au/math/iase/statlit.html>. Also the ICOTS-6 conference theme is *Developing a statistically literate society*, where special sessions on the role of statistics in a number of everyday contexts will be given with special emphasis on the needs of teachers.

Other conferences of interest to statistics educators such as the SRTL meetings, which focuses on research on statistics literacy, and studies of numeracy are involved in this broader area of statistical education.

## PUBLICATIONS

The IASE has a number of regular publications to keep its members informed of future events as well as reports of past events. These include the annual IASE Review, which includes a comprehensive account of the year's activities, past copies can be obtained from the IASE web site. The activities and articles about statistics education are provided by the IASE as an insert in each copy of the Journal, *Teaching Statistics*, which focuses on teachers and comes out three times a year. It also provides an article in the *ISI Newsletter* which gives information on the IASE to all ISI members. Research articles appear in the *ISI Review*, a refereed journal for which the IASE has an important input via an editor and a number of excellent articles on statistics education have appeared over the past few years. SERN and SERJ, as mentioned above, keep members well informed of research which is going on round the world in this discipline.

Furthermore the Proceedings of all the main meetings such as ICOTS and the Round Table meetings and some of the other meetings are produced by the IASE. Details of the publications and where they can be obtained is found on the IASE website.

## OTHER IASE ACTIVITIES

### *Developing Countries*

The IASE has worked with a number of developing countries to assist with their developments in statistics education. For example the IASE assisted in organising the PRESTA (Programme de Recherche et d'Enseignement en Statistique Appliquée) Conference held in Florianopolis (Brazil) 1999 in which 180 delegates came from many countries in Central and South America, see UFCS, PRESTA, IASE, (1999). More recently the organisation has been involved in helping other countries such as Chile, Peru and Argentina.

### *The World Numeracy Project*

An ISI committee was established in 1994 to stimulate the spread of quantitative skills around the world in areas and populations (especially in developing countries and among the young) that could benefit from increased knowledge of numbers and their applications, with particular regard to statistics. In 2000, it was decided that this Project would now come under the umbrella of the IASE. Carol Joyce Blumberg, one of the Vice Presidents of IASE, has begun the process of determining the name and focus for this project.

### *National Correspondents*

The IASE has a network of national correspondents who help provide communication between local membership in their countries and the IASE. This includes passing on information about the IASE activities to those concerned with teaching and learning statistics as well as letting the IASE know about activities in their countries. A list of the correspondents is given on the IASE website.

*Honorary Members*

The IASE by-laws now include the possibility of nominating Honorary Members as a way to recognise the work and dedication of some of our members. In 2000 the IASE Executive Committee approved the nomination of Anne Hawkins and David Moore, who have both made major contributions to statistics education, were Presidents of the Association at the crucial period when the Association was being established and whose work contributed significantly to the success of the IASE.

## THE IMPORTANCE OF STATISTICS EDUCATION AND THE IASE

Statistics is now recognised as a crucial part of the education of students at school level in many disciplines in post-secondary courses and is used by an ever increasing number of people in the workplace. In my report in the 1999 IASE Review I said,

I would say that statistics is studied by more students at post-secondary level than any other topic. Hence there are a very large number of people involved in teaching statistics and it is more important than ever that it is taught well and enthusiastically. As one of the main aims of the IASE is the improvement of statistical education worldwide, we have an important role to play in helping to achieve this. Phillips (1999, p 1.)

The IASE offers its members the opportunity to become part of the only international community interested in the improvement of statistical education at all levels. Members can both contribute to innovations and progress in statistical education and learn from colleagues. They receive various publications free and discount rates on others as well as discount rates at IASE and ISI meetings. Members have found the publications, meetings and contacts formed through IASE membership have been most helpful in their teaching of statistics. People from developing countries benefit from IASE membership since one of the aims of the IASE is to assist members by charging a smaller membership fee, giving assistance to attend ICOTS conferences and in a number of cases, has assisted with developing statistics programs in their own countries. For many, the greatest benefit of belonging to the IASE has been establishing contacts and international co-operations. The benefits of belonging to the IASE can be seen at the comprehensive IASE website, found at <http://www.swin.edu.au/math/iase/> which not only gives information about the IASE matters and membership benefits but also has links to sites of interest to anyone involved in teaching statistics.

The IASE has expanded its activities considerably since its first meeting in 1993. Its membership is expanding and broadening and it is facing the many challenges of statistics educators. These include: What should be taught in statistics classes? Who should teach statistics? How can they cater for huge differences in statistical needs and abilities among their students? How should technology be incorporated into statistical training? How can statistics educators in developing countries best meet the statistics needs of their students to help them live in a modern society? What research needs to be done to learn more about ways in which people learn statistics? The IASE is working towards helping answer these and many other issues in statistics education.

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