

NEWSLETTER FOR THE INTERNATIONAL STUDY GROUP ON LEARNING  
PROBABILITY AND STATISTICS CONCEPTS

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Notes and Requests

Our group has expanded since the last newsletter (April 15, 1988), partly due to the publicity given to us in the journal Teaching Statistics. Last January there was a membership form on the back cover of the journal, and in May there was an article by David Green and myself about the history and current plans of the study group.

Included in this newsletter is a list of our ten new members, whom we welcome into the group. Their addresses and research interests are included.

I have been working on compiling a master list of relevant publications of the study group. So far I have the first draft, which includes lists of papers (most are in English) which were sent to me by members during the past year. If your name is not on the list on the last page of this newsletter, please send your publication list to me.

Since the last newsletter, I have received two copies of tests of statistical understanding. These tests were used in research conducted by graduate students of Margaret Gallimore (Judith Jackson and Ann Dalzell) at the Centre for Statistical Education, Sheffield. If any one else has developed and/or used instruments to measure student understanding of probability and statistics concepts, please send me a copy for my test catalogue project. (I currently have only 6 tests!)

I know some of you attended the ISI roundtable, ICME and/or PME in Hungary, last month. If you presented a paper related to the learning of probability and statistics, please send me a copy. I have not seen a list of papers from any of these conferences and would appreciate a list of relevant papers presented for my bibliography project.

Information

I received a letter from David Vere-Jones, Deputy Chairman of ICOTS 3, which will be held in New Zealand in 1990. In case you didn't know, this is the Third International Conference on Teaching Statistics. The last was held in 1986 in British Columbia, Canada. A general call for papers and ( ) list of sessions will be sent out in November, 1988. David is interested in obtaining our

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assistance in finding ways to fund people, especially teachers, to attend ICOTS 3. The conclusion reached so far is that the best way to obtain funding is for local groups to coordinate attempts to obtain grant money and group discounts on air fares. The Programme Committee will be willing to write letters of invitation in order to help presenters secure funding, but cannot provide funding, except for some of the plenary speakers.

The overall theme of the conference is "Statistics for All", and the only "Stream" of sessions relevant to research on teaching and learning statistics appears to be "Stream A," Teaching Probability and Statistics in Schools. For more information, write to:

David Vere-Jones  
Deputy Chairman, ICOTS Programme Committee  
Institute of Statistics and Operations Research  
Victoria University of Wellington  
Private Bag Wellington  
New Zealand

A group of researchers in Massachusetts have developed a curriculum, "Reasoning under Uncertainty" and software to go with it (ELASTIC). These materials are for use with secondary school students, and have been piloted and evaluated. The project was funded by the National Science Foundation, and I received a copy of the final report from Andee Rubin. If interested, you may write to her at:

BBN Laboratories  
10 Moulton Street  
Cambridge, MA 02238  
USA

The June, 1988, issue of The Statistics Teacher Network (available from Beth Bryan, Department of Math and CSC, Augusta College, Augusta, GA 30910, USA) includes a draft of a set of principles for teaching statistics at the procollege level. The advisory committee for the second Quantitative Literacy Project would like feedback on these objectives. I found the list of principles to be realistic and well-stated. If interested, either obtain a copy of the newsletter from Beth Bryan or write directly to Richard Scheaffer, Department of Statistics, University of Florida, Gainesville, Florida, 32611, USA.

The current issue of Chance magazine (Vol 1, No. 3, 1988) has two articles of interest. One is titled "Some Ancient Anticipations of Probability," by Otis Duncan, in which the author shows parallels between his own work with probability models and lections from the classics, particularly from the writings of Plutarch. The second article, "Shere Hite and the Trouble with Numbers," raises questions about the research methodology and conclusions of the famed (and controversial) sex researcher. It's a good example of how to critique the reported results of a research study.

I received a copy of "Bootstrap Stats.: A Wholly New Way To Do and Teach Probability and Statistics." The software and accompanying manual were written by Julian L. Simon, and can be used on IBM computers. The Bootstrap Stats program enables students to simulate experimental trials, using Monte Carlo methods. For information, contact Scholar Tech, P.O. Box 83371, Lincoln, Nebraska, 68501, USA.

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A recent article (March, 1988) in School Science and Mathematics by Richard Beres is about the statistical proficiency of college-bound students. He discusses the value of statistics in the secondary curriculum, the current level of statistical preparation of students entering college, and factors related to students' precollege work in statistics. I assume reprints are available from: Richard Beres, Department of Information Systems, The University of Toledo, Toledo, Ohio, 43606, USA.

In the May, 1988, copy of American Statistician, Frederick Mosteller writes about his views of teaching statistics, in "Broadening the Scope of Statisticians and Statistical Education." I was interested to see that he has begun using some writing activities in his lecture classes in order to better understand student difficulties and to assess the effectiveness of his teaching.

#### Information Sent by Study Group Members

P.H. Cheung sent me a copy of "An Appraisal of the Teaching of Statistics in Secondary Schools of Hong Kong." This report contains information of the Hong Kong education system, the present status of statistical education in Hong Kong, identifies weaknesses in their Statistical education, and suggest ways the system could be improved. Cheung's address is in the April newsletter, if you would like to obtain a copy of this interesting report.

Mary Rouncefield at the Centre for Statistical Education, Sheffield, has sent information on her "Practical Statistics" project. Her group has produced a series of practical assignments to introduce students to statistical topics, giving them a background of experience before they embark on any theory. These materials cover a complete course in statistics for high school or the first year of college. If you would like more information, contact Mary, whose address is in the last newsletter.

David Green, the current editor of Teaching Statistics, has written to me about his plans for changing the format and content of this journal. There will be new sections on computing, puzzles and problems, class and individual projects, sources of data, along with some of the existing sections. He is interested in having a wide variety of articles submitted to the journal, and in increasing the journal's worldwide circulation.

This is quite a long newsletter, and I hope you have enjoyed reading it. I always appreciate your comments and suggestions. The next newsletter should come out in December.

New Study Group Members

<u>Name and Address</u>	<u>Research Interests</u>
Ms. Ann Dalzell 121, Newlands Road, Kings Heath, Birmingham, B30 2RL ENGLAND	Interests relate to 11-18 age group. Interested in gender issues. Not involved in research at present.
Dr. Elisabeth M. Goodwin Department of Education and Science 60 Rochester Row London SW1P 1YP UNITED KINGDOM	My job requires me to visit polytechni and colleges looking at the teaching of probability and statistics.
Enno L.E. Gowers Hauptstr. 219 5000 Koeln 90 WEST GERMANY	Probability and Statistics in secon- dary education.
Mrs. Judith Jackson Ridre Barn Widdop Hibden Bridge W. Yorks HX7 7AT ENGLAND	
Mr. Ed Jacobsen ED/STE UNESCO Place De Fontenoy Paris 75700 FRANCE	Study of goals in math education; education of learning math; teacher education (math); international statistics education.
Dr. Alan C. Kimber Dept. of Mathematics University of Surrey Guildford Surrey GU2 5XH ENGLAND	Reliability, outliers, applications of statistics in biology/medicine/ engineering. Intuition re outliers normality, variability etc; "simple and "interesting" stochastic proces:
Professor Gottfried E. Noether 88 Hillyndale Road Storrs, CT 06268 USA	Use of nonparametrics in teaching statistics. Currently serves as chairman of ISI task force on Teaching Statistics at school level
Professor Allan C. Malmberg Royal Danish School of Educational Studies 115 B Emdrupvej 2400 Copenhagen NV DENMARK	The teaching of probability and statistics (Grade 1-10); the use of informatics in mathematics education (Grade 1-10)

Mr. John Pancari  
St. Joseph High School  
133 North Third Street  
Hammonton, NJ 08037  
USA

Teaching statistics in secondary  
school.

Dr. Murray H. Siegel  
315 Meadowood Drive  
Roswell, GA 30075  
USA

Use of median-based techniques to  
develop more classical statistical  
concepts. Use of statistical topics  
and surveys to enhance teaching of  
math topics.

MEMBERS WHO HAVE SUBMITTED CURRENT LIST OF RELEVANT PUBLICATIONS:

Meral Aksu  
P.H. Cheung  
James Clayson  
Ruma Falk  
E. Fischbein  
Joan Garfield  
L.V. Glickman  
Flavia Jolliffe  
Clifford Konold  
Marie Paule Lecoutre  
A. Pesci and M. Reggiani  
Mary Rouncefield  
Heinz Steinbring

If your name is not on this list, please send me your list, soon! Thank you.