



Statistics Education Research Journal

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Statistics Education Research Journal

The Statistics Education Research Journal is published by the International Association for Statistical Education and the International Statistical Institute to:

- encourage research activity in statistics education;
- advance knowledge about students' attitudes, conceptions, and difficulties as regards stochastic knowledge;
- improve the teaching of statistics at all educational levels.

The Journal encourages the submission of quality papers, including research reports, theoretical or methodological analyses, and integrative literature surveys, that can advance scholarly knowledge, research methods, and educational practice in any of the broad areas related to statistical education or learning of statistics and probability at all educational levels and in all educational contexts. Contributions in English are preferred. Contributions in French and Spanish will also be considered. All papers are blind-refereed by at least two experts in the field.

Submissions

Manuscripts should be sent to co-editor Flavia Jolliffe (F.Jolliffe@kent.ac.uk), by email, as an attached document in Word format. Full details regarding submission are given in the Guidelines for Authors on the Journal's Web page: <http://www.stat.auckland.ac.nz/serj>.

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EDITORIAL

Welcome to the May 2004 issue of SERJ, which is the first issue since Iddo Gal succeeded Carmen Batanero as co-editor with Flavia Jolliffe. This issue contains five papers. The paper by Jose Carmona Marquez, the second paper we have published in Spanish, reviews evidence for the reliability and validity of instruments assessing attitudes towards statistics and suggests priority research areas on this topic. Sue Gordon's paper explores the attitudes towards statistics of psychology students in Australia. Both these papers focus on dispositional aspects of learning statistics. Sonia Kafoussi's paper is one of a few papers published so far on probability work with very young children. Paula Williamson's paper is on the teaching of statistics to PhD students in medical schools in the UK, and the paper by Maria Virginia Lopez and colleagues is on statistics teaching in agricultural colleges in Argentina. These papers overall examine a variety of issues related to the learning, teaching, and content of statistics teaching in diverse cultural contexts.

Over the last few months, several important internal changes have occurred at SERJ. Since the journal continues to expand, and with an increasing number of submissions, we have felt it necessary to further expand the editorial board while retaining its international nature. Details of the seven new associate editors are given at the end of this editorial. We are very grateful that they have agreed to serve on the board. On the other hand, David Green (University of Loughborough, UK) has had to resign as an associate editor and we would like to thank him for his contribution to SERJ.

We have been changing the way we deal with submissions, with the intention of making working procedures more effective, and are in the process of updating the guidelines for authors and referees. The SERJ web page has moved and is now hosted by the University of Auckland as part of the IASE web page which carries archives of former newsletters as well as hundreds of papers presented at international conferences such as ICOTS-6 (Cape-Town, 2002), ISI-54 (Berlin, 2003), and other meetings. We thank IASE president and associate editor Chris Wild, and Rachel Cunliffe, the webmaster of the IASE website, for their efforts in this regard. We would also like to thank the University of New England, Armidale, Australia, for hosting the SERJ webpage and Chris Reading for developing the SERJ webpage and serving as its webmaster during the first two years of development.

As previously announced, our next issue in November 2004 will be devoted to the topic of reasoning about variability and variation. This Special Issue (Guest Editors: Joan Garfield and Dani Ben-Zvi) will include half a dozen papers first presented at the Third Forum on Statistical Reasoning, Thinking, and Literacy (SRTL-3, Nebraska 2003), and then revised and submitted to SERJ for refereeing, as well as several introductory and reaction papers. In publishing this Special Issue, we will take advantage of the ability of an electronic journal such as SERJ to publish a substantial number of papers within a single issue. We will thus be able to offer our diverse audiences a broad coverage of a topic of central importance in statistics education, variability and variation, which has so far received little solid research attention.

FLAVIA JOLLIFFE AND IDDO GAL

NEW ASSOCIATE EDITORS

SERJ welcomes the following new Associate Editors, who have joined the Editorial Board for a 3-year appointment 2004-2007.

Andrej Blejec is Assistant Professor of Statistics and Computer Science in the Department of Biology at University of Ljubljana, Slovenia. He has more than 20 years of experience in teaching statistics for biologists and works as a statistical consultant at the National Institute for Biology. He is presently teaching undergraduate courses in Statistics and Computer Science and graduate courses in Biostatistics and Computational Statistics. He was a vice-president of the Slovenian Statistical Society (SSS) from 1997-2001, and is a president of the Section for Statistical Education of SSS. He has been a member of IASE since its foundation and serves as a National Correspondent for Slovenia. His main interest in statistical education is design and use of computer simulation systems for explanation of statistical concepts and use of computer technology for better teaching of statistics. At ICOTS6 he organized a session on the use of technology and computer simulations in statistics education. His current research is connected with application of stochastic processes in neuroscience and analysis of DNA micro-array experiments.

John Harraway is a Senior Lecturer in the Department of Mathematics and Statistics at the University of Otago, New Zealand. He has taught probability and statistics for over 25 years. This includes large classes in business, the biological sciences and biostatistics for students entering medicine, dentistry, pharmacy and physiotherapy. He was Chief Examiner in Statistics for the New Zealand Qualifications Authority from 1993 to 1997. He is author of two texts, *Regression Methods Applied* and *Introductory Statistical Methods for the Biological, Health and Social Sciences* (University of Otago Press, 1995 and 1997). In addition to consultancy which has led to recent publications on dolphin behaviour and habitat selection, his current research focuses on training researchers in the use of statistics. This has involved an analysis of all papers published in 1999 in 16 high profile journals, a workplace study of statistics use by recent PhD and Masters graduates and an investigation of statistical procedures used by PhD students. He organised the session on multivariate statistics at ICOTS6 and is Scientific Secretary for ICOTS7. He is a member of the Advisory Committee of the International Statistical Literacy Project.

Lionel Pereira-Mendoza is an Associate Professor in Mathematics Education at the National Institute of Education, Nanyang Technological University, Singapore. He is also currently Associate Dean of Educational Research for the Institute. During his career he had taught in England, Canada and Singapore. He has been involved in IASE and ICOTS activities for many years and was the local organiser of ICOTS in Singapore. His particular research interest is in the area of graphing and how primary children interpret graphical information from their environment and currently has some graduate students working in this area. In addition, he is leading an international team involving the USA, China, South Korea, Thailand and Singapore looking at Mathematics and Science Education in selected areas of these countries.

Maxine Pfannkuch is a senior lecturer in the Mathematics Education Unit in the Departments of Mathematics and Statistics at The University of Auckland, New Zealand. She graduated with an MSc in mathematics, then taught for many years in a secondary school, after which she trained secondary mathematics teachers. Five years ago she completed a doctorate in statistics education. She is presently teaching introductory undergraduate mathematics and statistics courses as well as graduate courses in statistics education and assessment. Her research is focused upon the development of secondary students' statistical thinking and the development of undergraduate students' statistical literacy.

Mokaeane Victor Polaki is a Senior Lecturer in Mathematics Education in the School of Education at the National University of Lesotho (NUL) in Southern Africa, and teaches mathematics and mathematics education courses to prospective teachers in the same university. Additionally, he is the Head of the newly formed School of Education (formerly Faculty of Education) in the same University. He has published a number of research articles on the development of children's probabilistic thinking and is currently working on students' statistical literacy. In addition to having been the National Correspondent for the International Association for Statistical Education (IASE), he has served as the Regional Representative for the Southern African Association For Research in Mathematics, Science and Technology Education (SARMSTE). In Lesotho he is also a member of the National Mathematics Panel, National Curriculum Committee, and is currently helping the Examinations Council in conducting the assessment of children's literacy and numeracy in Lesotho's elementary schools.

Dave Pratt is a Senior Lecturer in the Institute of Education at the University of Warwick, England. He is Director of the Centre for New Technologies Research in Education (CeNTRE). His teaching encompasses teacher training, mostly at secondary level, and research into the relationship between technological tools and mathematical thinking. His doctoral research focused this broad interest onto technology and students' probabilistic thinking, which has been the stimulus for probability as a continuing strand of his overall research. His work on probability has triggered progress on formulating a theoretical framework on the micro-evolution of mathematical knowledge. He is also on the editorial board of the International Journal of Computers for Mathematical Learning.

Jane Watson is a Reader in Mathematics Education at the University of Tasmania, Hobart, Australia, where she oversees the training of pre-service teachers in mathematics at the primary, middle, and secondary school levels, and directs research projects related to the Chance and Data part of the school curriculum. Over the last decade she has played a major role in four nationally funded professional development projects for teachers in mathematics and statistics education, as well as 13 nationally funded research grants ranging from one to three years. Eight of these grants have focused on students' and teachers' understandings of Chance and Data and have included longitudinal understanding, the effect of collaboration on higher order thinking, and the effect of cognitive conflict on understanding. Current projects are studying understanding of variation and a model for an underlying construct of statistical literacy. Over the years she has published over 200 papers and other multi media work, such as a CD ROM, web site on quantitative literacy in the newspaper, and a radio essay for national broadcast. Reports of her research have appeared in major research journals (e.g., Journal for Research in Mathematics Education, Educational Studies in Mathematics, For the Learning of Mathematics, Mathematical Thinking and Learning, Focus on Learning Problems in Mathematics). In Australia, she was the winner of a prestigious Ian Clunies Ross National Science and Technology Medal in 1999 for her work in statistical literacy, using technology to reach teachers and students with the message that statistics is crucial for survival in today's society.