



Statistics Education Research Journal

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Statistics Education Research Journal

The Statistics Education Research Journal (SERJ) is a peer-reviewed electronic journal of the International Association for Statistical Education (IASE) and the International Statistical Institute (ISI). SERJ is published twice a year and is free.

SERJ aims to advance research-based knowledge that can help to improve the teaching, learning, and understanding of statistics or probability at all educational levels and in both formal (classroom-based) and informal (out-of-classroom) contexts. Such research may examine, for example, cognitive, motivational, attitudinal, curricular, teaching-related, technology-related, organizational, or societal factors and processes that are related to the development and understanding of stochastic knowledge. In addition, research may focus on how people use or apply statistical and probabilistic information and ideas, broadly viewed.

The Journal encourages the submission of quality papers related to the above goals, such as reports of original research (both quantitative and qualitative), integrative and critical reviews of research literature, analyses of research-based theoretical and methodological models, and other types of papers described in full in the Guidelines for Authors. All papers are reviewed internally by an Associate Editor or Editor, and are blind-reviewed by at least two external referees. Contributions in English are recommended. Contributions in French and Spanish will also be considered. A submitted paper must not have been published before or be under consideration for publication elsewhere.

Further information and guidelines for authors are available at: <http://www.stat.auckland.ac.nz/serj>

Submissions

Manuscripts must be submitted by email, as an attached Word document, to co-editor Tom Short <tshort@iup.edu>. Submitted manuscripts should be produced using the Template file and in accordance with details in the Guidelines for Authors on the Journal's Web page: <http://www.stat.auckland.ac.nz/serj>

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EDITORIAL

This issue is special in two ways, both because it is a special issue focused on research on reasoning about distribution, and because it marks the end of SERJ's fifth year of operation. This editorial elaborates both on the topic chosen for this special issue, as well as on SERJ's status at this point in time and thinking ahead.

We are pleased to offer this special issue, which is based on SERJ's collaboration with SRTL – the biannual international research forum on Statistical Reasoning, Thinking, and Literacy. Two years ago, based on papers discussed at SRTL-3, we published a Special Issue on reasoning about variation and variability, with guest editors Joan Garfield and Dani Ben-Zvi, who have been organizing SRTL since 1998. The current issue includes several papers related to reasoning about distribution, the topic chosen for SRTL-4 which took place in 2005. We thank Maxine Pfannkuch and Chris Reading for serving as Guest Editors for this issue.

The papers in this issue highlight the centrality of distribution as a core construct and a set of interactive tools which learners of statistics, or adults having to make sense of statistical information in the world, have to cope with or relate to at various stages and levels of learning or working with statistics. Think of just three situations where notions of distribution come up: dealing with visual representations of counts of data in basic charts and graphs, making predictions about the results of using random generating devices such as dice based on results of prior events, and having to grasp second-order abstractions embodied in sampling distributions. In these and many other contexts, students at all levels of learning, and thus their teachers, find themselves continuously engaged in generating, interpreting, communicating about, and using distributions and thinking about variability in data. While seemingly simple, distributions present many challenges to teachers and researchers alike, because of the multiplicity of areas within the domains of statistics and probability where they appear, and their changing level of complexity in different contexts of learning or using statistics.

The research papers in this issue explore in depth some of the many issues associated with making sense of and reasoning about distribution, and in so doing also illustrate that a range of methodological approaches are needed to study learning and reasoning processes in this area, both qualitative and quantitative. We hope to see additional papers on reasoning both about distribution and variation in upcoming issues of SERJ, so as to add to the cumulative knowledge base on these foundational areas of statistical knowledge.

Over the last five years, the journal has developed substantially and is attracting a growing number of both readers and authors. The editorial board includes experts from 11 geographically dispersed countries. Papers being submitted represent work being carried out in many places around the world, and the flow of manuscripts is growing. In the 12-months period October, 2004 through October, 2005, we received 22 manuscripts. Of these, eight were found not suitable for SERJ and were not refereed; five had potential but needed revision even before refereeing; three were rejected after an external review, and six were rewritten and resubmitted for further review. Only five of these 22 manuscripts have been published by now. In contrast, during the most recent calendar year the number of submitted papers has almost doubled. This can be attributed both to the growing centrality and recognition of the journal, as well as to the fact that more research is being carried out on statistics education.

As the journal continues to grow, it faces many challenges. SERJ operates in an emerging area which is of interest to diverse scholars and practitioners, and to both new and established researchers. Our submitting authors and our external referees, come from diverse disciplines with somewhat different traditions, such as statistics, education, psychology, natural sciences, medicine, business, engineering, and others. Given the international nature of SERJ, we have to be aware of diversity and accommodate variations in aspects of scientific reporting and academic writing. As a research and practice community we will need to seek ways to maintain high standards and convey high expectations for quality both to authors, referees, and researchers alike.

Towards helping the maturation of the field of statistics education research, SERJ has initiated several activities in the last two years. At the 55th meeting of the International Statistics Institute in Sydney (2005), SERJ arranged a workshop for prospective authors designed to educate about writing high-quality research papers. At the 7th International Conference on Teaching Statistics held in summer 2006 in Salvador, Brazil, SERJ arranged two workshop, one for prospective authors similar to that held at ISI, and a new innovative one for referees on writing good reviews. The feedback from participants who attended these workshops suggests that they can help both new and continuing researchers interested in the emerging field of statistics education research, and we thus will aim to continue with such workshops in coming years.

Looking forward into the next few years, we hope to see a growth in the range of topics addressed by research, and in the range of the methodologies employed. Many areas in statistics education require more research, such as learning and reasoning about inferential statistics, correlations and associations, probabilistic reasoning, or the understanding of statistics encountered in everyday contexts or in official statistical publications, to name just a few. Exploratory research on these and other core areas will surely require the continued use in years to come of diverse types of qualitative designs and descriptive quantitative designs. Yet, as time goes by we do hope to see a growing number of studies employing experimental and comparative designs which can provide evidence in line with the growing expectations that educational research provides solid information about the relative efficacy of different interventions or teaching methods.

In closing, we want to thank our many referees, whose challenging role is to help the journal maintain high scholarly standards. SERJ serves a diverse and expanding community of practitioners and researchers interested in statistics education and learning in diverse fields and contexts. We encourage SERJ readers to send us reactions and ideas regarding the journal, its scope, papers it publishes, and possible future plans.

IDDO GAL AND TOM SHORT