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 Robert delMas <delma001@umn.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

Welcome to the first issue of *SERJ* for 2012. This issue consists of two articles with several things in common. Both utilized a large team of researchers from the same institution to carry out the respective studies. They both present research on the relationship between curriculum and the learning of statistics at the tertiary level. Finally, both articles present well-designed studies that argue for carefully chosen statistical methods to address the nature of each study design and the collected data.

The first article by Danielle Dupuis and colleagues from the University of Minnesota, USA presents results from the application of a hierarchical linear modeling approach and other methods to the analysis of a large database that allowed them to explore relationships between students' secondary mathematics curriculum and both their choice of and grades in a first statistics course in college. There are many interesting aspects to the research presented in the article. Mathematics educators in the USA have developed a variety of secondary mathematics curricula based on the Standards such as those supported by the National Council of Teachers of Mathematics. Dupuis et al. did not find a relationship between the type of secondary mathematics curriculum a student experienced and either the difficulty level of or the grade earned in the first course in statistics taken by students at the college level. A relationship was found between secondary math achievement and both the difficulty level of and grade earned in students' first college-level statistics course. I believe that readers will find not only the results and discussion of interest, but also the methodology. I hope that we see more large scale studies that use modern multivariate methods applied to data of interest in statistics education in the future.

In the second article, Nathan Tintle and colleagues at Hope College, USA present results from the comparison of a randomization-based curriculum for a first course in statistics to a more traditional, or as described in the article, "consensus" curriculum. Some of the key features of the study are the careful planning to collect data from two different cohorts of students, the use of a standardized assessment of statistical literacy and reasoning as the outcome measure, the inclusion of a four-month follow-up testing to measure retention, and the use of pretest and posttest scores as covariates in the analysis of follow-up scores to adjust for differences in the self-selection of students who participated in the follow-up assessment compared to those who did not. They argue that their results present evidence of better retention from students enrolled in the randomization-based curriculum, especially with respect to the topics of data collection/ design and tests of significance. The authors' discussion of the results argues for how characteristics of the randomization-based curriculum, when contrasted with the consensus curriculum, promote earlier understanding of concepts such as *p*-value, and engage students for a longer period of time in both informal and formal aspects of statistical inference.

I believe you will find, as I did, that both articles extend our understanding of how curriculum contributes to students' understanding of statistics, and that the research and statistical methods add to the available repertoire of research approaches used in statistics education research. Enjoy!

ROBERT DELMAS

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"NEW" CO-EDITOR

We are pleased to announce that Peter Petocz (Macquarie University, Sydney) has agreed to serve another 4-year term as co-Editor of the *Statistics Education Research Journal*. Peter has done an excellent job with managing special issues, including one scheduled for fall 2012 on research related to students' attitudes towards statistics, and has several promising ideas for future special issues in the works.

CALL FOR NOMINATIONS FOR NEW ASSISTANT EDITOR: *STATISTICS EDUCATION RESEARCH JOURNAL*

The *Journal* is looking for someone to join its Editorial Board as Assistant Editor for a four-year term. The Assistant Editor is in charge of the copy-editing and preparation of manuscripts accepted for publication, and for producing each issue in PDF format. Work is intermittent during the year and increases during the weeks leading to the publication of a new issue each May and November (and possible additional special issues), when communication with authors and editors is also needed. Depending on qualifications, the Assistant Editor may also be involved in managing the *SERJ* website or taking part in other activities of the *SERJ* editorial board. The ideal candidate will have excellent command of the English language, interest in editorial work, familiarity with basic desktop publishing or PDF-producing software, and some familiarity with research in statistics education.

Interested colleagues should send a letter of intent and a short curriculum vitae to Bob delMas <delma001@umn.edu>, to whom any queries about the position may be addressed.