

New Perspectives: A Statistician and a Statistics Educator Discuss the Lessons Learned from Cross Disciplinary Sojourns

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Within science and mathematics, including the field of statistics, there is increasing evidence that although instructors are aware of research on teaching and learning, changes in instructional practices are uncommon or implemented haphazardly with a lack of persistence and/or evaluation. Briefly, there is a substantial gap between the research and its large-scale implementation. In addition, most researchers who study the teaching and learning of statistics, statistics educators, are trained in departments of educational psychology, mathematics education and/or mathematical sciences and not in departments of statistics. As such they may not have been fully immersed in the discipline of statistics. Having one or more statistics educators on faculty in a department of statistics can address both of these issues simultaneously. There is the opportunity for disciplinary statisticians who instruct to discuss research on teaching and learning with experts, to see research-informed teaching in practice and to evaluate such teaching practices on student outcomes. The statistics educators not only inform the department of innovations in teaching and learning of statistics, but also learn the true nature of statistical research, both in terms of the cycle of enquiry in which statisticians function and the types of problems valued by the discipline. Statistics education research becomes part of the culture of the department and statistics educators are acculturated into the domain of statistics. This paper will illustrate what one statistician and one statistics educator, working together in a department of statistics, learned from talks given in the other discipline. The paper will conclude with results from a research project on student motivation completed by a research team of statisticians and statistics educators.

Key Words: Undergraduate learning, Collaborative research dissemination, cross-discipline professional development.