Time for a New Curriculum for Social Statistics?

Salvatore J. Babones, Ph.D.
Senior Lecturer in Sociology and Social Policy
The University of Sydney
sbabones@inbox.com

Today's curriculum in social statistics is largely identical to the one that H.M. Blalock set out fifty years ago in his hugely influential *Social Statistics*. The first edition of *Social Statistics*, published in 1960 by McGraw-Hill, covered twenty topics:

1. Theory and measurement  
2. Proportions and percentages  
3. Frequencies and histograms  
4. Central tendency  
5. Measures of dispersion  
6. The Normal distribution  
7. Hypothesis testing  
8. Probability and sampling  
9. Binomial distributions  
10. One-sample t tests  
11. Confidence intervals  
12. Two-sample t tests  
13. Nonparametric tests  
14. Chi-square tests  
15. ANOVA  
16. Correlation and regression  
17. Partial correlation  
18. ANCOVA  
19. Factor analysis  
20. Sampling techniques

Fifty years on, we still cover at least 15 of the first 16 topics and finish the semester with correlation and simple regression. Despite massive improvements in teaching methods and technologies, the curriculum has remained virtually unchanged, as if it had been set in concrete by Blalock fifty years ago.

This is remarkable for two reasons. First, Blalock's choices of topics to include in *Social Statistics* -- and even more so his approaches to those topics -- were driven in large part by the challenges of doing calculations by hand. Today, of course, simplicity of calculation is simply not an issue, but we still make students jump through the old hoops that now no longer serve any purpose. We often justify this on the basis of "I did it and it was good for me," but I have yet to meet a student whose understanding is helped by doing calculations. In my experience, it actually works the other way around: those students who understand the meanings behind the procedures use this understanding to help them figure out how to do the calculations. That's certainly how it worked for me.

Second, and much more important, the discipline has changed enormously over the past fifty years. Today's journal articles are all regression, regression, regression. Interquartile ranges, binomial distributions, contingency tables, and non-parametric tests of all kinds may be interesting enough in their own rights, but they're clearly less important for our students than understanding regression. Most undergraduate students are never exposed to multiple linear regression, which effectively means that they can't even start to understand articles from the professional literature. This prompts the question: why are we teaching them statistics? If we're not bringing students up to even a basic level of literacy in quantitative sociology as practiced in the discipline today, why are we teaching them statistics at all?

I'd like to suggest that what we need is a new curriculum, one centered around "regression, regression, regression." Multiple linear regression is mathematically and computationally
complicated, but conceptually not that difficult. I've been teaching multiple regression to my own first-course students for years. It takes about half a semester to get there, which leaves half a semester for regression modeling. What's more, other techniques like t tests and ANOVA can be taught as kinds of regression models. In my curriculum, students learn just three procedures in SPSS -- frequencies, descriptives, and regression -- and use these to generate all the results they need. They learn how to do real professional-type analyses of the kinds they see in journals, and they love it.

Blalock acknowledged in his 1960 preface that "One of the most difficult problems encountered in the teaching of applied statistics is that of motivating students" (page vii). He might just as well have added "and teachers." My instinct is that the problem is not us, or our students, but our curriculum. I'm currently at work on an undergraduate statistics textbook for Oxford University Press that will lay out a new, 21st Century curriculum for social statistics. I would welcome the comments and feedback of STLS members around what to include in it. If you were designing a social statistics course now, for the first time, with no history of having offered it before . . . what would you teach? What would you like to see in a 21st Century curriculum for social statistics? What do you really want to be teaching to your students?

It's safe to say that most students and teachers find the experience of social statistics a painful one. It is a trial to be endured, not a playground to be explored. As an enthusiastic teacher and user of statistics, this saddens me. Social statistics should be a mind-expanding window onto a new world of discovery. As one of the few hands-on classes in our programs, it should be engaging and fun. I see so many dedicated teachers pouring enormous creativity into trying to make a staid 50-year-old curriculum fresh and lively with little to show for it but heartache. The problem isn't the dedicated, creative teachers. The problem is the curriculum. I think we can come up with a more productive, more enjoyable curriculum for our students and for ourselves. I hope that many STLS members will join me in trying.