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An elephant never forgets: effective analogies for teaching statistical modeling.

MacGillivray, Helen (ed.) et al., Topics from Australian conferences on teaching statistics. OZCOTS 2008–2012. New York, NY: Springer (ISBN 978-1-4939-0602-4/hbk; 978-1-4939-0603-1/ebook). Springer Proceedings in Mathematics & Statistics 81, 13-24 (2014).

Summary: Analogies are useful and potent tools for introducing new topics in statistics to students. *M. A. Martin* [J. Stat. Educ. 11, No. 2, 1–25 (2003; ME 2011d.00757); “What lies beneath: inventing new wheels from old”, in: OZCOTS 2008, Proceedings of the 6th Australian Conference on Teaching Statistics. Statistical Society of Australia Incorporated (SSAI). 35–52 (2008)] considered the case for teaching with analogies in introductory statistics courses, and also gave many examples of particular analogies that had been successfully used to make difficult statistical concepts more accessible to students. In this chapter, we explore more deeply analogies for statistical concepts from more advanced topics such as regression modeling and high-dimensional data.

Classification: K80 K70 K90 K40

Keywords: analysis of variance decomposition; influence; leverage; model selection; multicollinearity; regression; sequential sums of squares; testing multiple hypotheses

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