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Finding a happy median: another balance representation for measures of center.

J. Stat. Educ. 22, No. 3, 28 p., electronic only (2014).

Summary: This paper explores the use of a lesser-known dynamic model for the median, a foundational topic that starts in the middle school curriculum and is associated with student misconceptions and knowledge gaps. This model appears to offer a rich vehicle to explore the median interactively in greater conceptual depth that includes some of its more subtle associated ideas. An exploratory study to assess performance of this model in a class for pre-service middle school teachers yielded evidence that students who completed the dataset sequence associated with the model gained further insight about the median, especially concerning how the mean and median are affected differently by outliers. Analyses of open ended questions as well as empirical results of multiple-choice questions are used to assess the overall learning outcomes gained by students. A one-minute video is offered to illustrate key points of the model.

Classification: K49

Keywords: stochastics; descriptive statistics; teaching; educational research; preservice teacher education; means; median; understanding; measures of center; misconceptions; analysis of learning outcomes; balance point representations; outliers; non-uniqueness

<http://ww2.amstat.org/publications/jse/v22n3/lesser.pdf>