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Using TinkerPlots software to learn about sampling variability and distributions as a basis for making informal statistical inferences.

Amado, Nélia (ed.) et al., Proceedings of the 12th international conference on technology in mathematics teaching, ICTMT 12. Faro: University of Algarve (ISBN 978-989-8472-68-7). 77-85 (2015).

Summary: We report on a study involving an instructional sequence that engaged a class of high school students in using TinkerPlots^{TM} software to make informal statistical inferences on the basis of distributions of a sample statistic. The sequence involved a scenario and tasks entailing the comparison of multiple samples of two groups of organisms on a common attribute. Students engaged in 1) making sense of the scenario and a TinkerPlots simulation that produced distributions of a sample statistic, 2) interpreting a sequence of such distributions in relation to increasing sample size, and 3) inferring a value of the sampled population attribute. We highlight aspects of students' understandings of what an empirical sampling distribution represented in terms of the scenario's context, and aspects of their abilities to track the multi-tiered resampling process that began with a population and culminated with distributions of the sample statistic on which they based their inferences.

Classification: U74 K74
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