Designing data and statistics co-explorations for students and teachers.

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Abstract

Mathematics teachers strive to help their students understand and master applications of difficult concepts. However, it is important to question what understandings teachers themselves have of these difficult concepts. For example, statistics requires teachers to understand the nuances of contexts because those situations influence what type of statistical tests one can perform. Unfortunately, mathematics teachers rarely receive pre- or in-service training in statistics education yet are required to teach the content. This project will investigate a participant structure within an activity that encourages the students and the teacher to co-explore statistics, rather than teaching statistics like they teach mathematics —through algorithms. With countries embedding statistics within math curriculums, this study can help shift the focus from learning content to helping teachers and students understand the context of statistics. This Design-Based Research study reviews the implementation of a participant structure and adapted thinking routine that enables students and the teacher to co-explore the complexities of statistics.

Keywords: Statistics Education, Design-based research, participant structures, Thinking Routines, Co-exploring