Working Together to Improve Statistics Education: A Research Collaboration Case Study

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In 2010 a new school statistics curriculum was instituted in New Zealand. This paper describes how a group of professional statisticians, statistics education researchers, and practising teachers worked together to produce a curriculum that reflected modern and future statistical practice and that incorporated statistics education research findings about student learning. Since the approach to teaching statistics and the content was new, particularly in the area of statistical inference, we refer to how the group mounted two large consecutive two-year research projects. These projects were aligned with the staged introduction of the secondary curriculum in order to support teachers in the upcoming changes. New learning trajectories, dynamic visualization software, verbalizations and resources were trialled in classrooms. The consequent research findings about students' learning and reasoning processes were used to improve learning trajectories and to inform teachers about potential student learning issues. With such a transformative change to the statistics curriculum we discuss also how the group needed to work on many other fronts to ensure key stakeholders in the education enterprise such as the Ministry of Education and the New Zealand Qualifications Authority were conversant with the changes. This case study of a major change in a school statistics curriculum discusses the benefits of collaboration between statisticians, researchers, and educators and the challenges involved in ensuring that the curriculum was interpreted as it was intended and implemented successfully across the country.