

Engaging students in statistics education: situated learning in statistics projects

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Abstract

Teaching an introductory statistics course to undergraduate students is a great challenge. Inspiring students and maintaining students' attention puts a burden on statistics developers and –teachers. Taking a statistics course as a student is even a bigger challenge: students in general do not like this mandatory course, as they fear the formulas will be too difficult to understand and they find the content matter too abstract. Lastly, they fail to see the added value of statistics for their future careers.

One of the major challenges in statistics education is the high level of complexity and the distance between in-class examples and 'real world' experience. Statistics would become more accessible if students could learn how to put research results to use, i.e. context-specific situations. One way to engage students in learning statistics is to organize group projects. This situated learning approach is implemented in introductory statistics courses in a small scale Liberal Arts & Sciences College in the Southwest of the Netherlands. Real life questions derive from societal organizations in the region where the college is based; students form groups, write a research proposal and – upon the approval of the organization involved – carry out the study and report the results; the statistics professor provides supervision.

This paper provides an insight in the results of two small-scale qualitative evaluation studies concerning statistics projects, whereby the focus is the students' perspective. The outcomes indicate that student engagement improves and the added value of statistics unfolds; the learning becomes more contextual, active and culturally based in a 'community of learning'. Moreover, students find ways to construct their own learning. Lastly, students learn how to develop critical thinking skills that are put to use in other fields of study.

Key Words: Statistics group-projects, situated learning, added value of statistics, project based learning.