

Factors Influencing the Enjoyment and Performance of Students in Statistics Service Courses: A Mixed-Method Study

Authors : Wilma Coetzee

Abstract : Statistics lecturers experience that many students who are taking a service course in statistics do not like statistics. Students in these courses tend to struggle and do not perform well. This research takes a look at the student's perspective, with the aim to determine how to change the teaching of statistics so that students will enjoy it more and perform better. Questionnaires were used to determine the perspectives of first year service statistics students at a South African university. Factors addressed included motivation to study, attitude toward statistics, statistical anxiety, mathematical abilities and tendency to procrastinate. Logistic regression was used to determine what contributes to students performing badly in statistics. The results show that the factors that contribute the most to students performing badly are: statistical anxiety, not being motivated and having had mathematical literacy instead of mathematics in secondary school. Two open ended questions were included in the questionnaire: 'I will enjoy statistics more if...' and 'I will perform better in statistics if...'. The answers to these questions were analyzed using qualitative methods. Frequent themes were identified for each of the questions. A simulation study incorporating bootstrapping was done to determine the saturation of the themes. The majority of the students indicated that they would perform better in statistics if they studied more, managed their time better, had a flare for mathematics and if the lecturer was able to explain difficult concepts better. They also want more active learning. To ensure that students enjoy statistics more, they want an active learning experience. They want fun activities, more interaction with the lecturer and with one another, more computer based problems, and more challenges. They want a better understanding of the subject, want to understand the relevance of statistics to their future career and want excellent lecturers. These findings can be used to direct the improvement of the tuition of statistics.

Keywords : active learning, performance in statistics, statistical anxiety, statistics education

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