

INVESTIGATING STUDENTS' COMPETENCE LEVEL IN SECONDARY SCHOOL STATISTICS

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Abstract

Statistical literacy is an important skill for today's citizens. Statistics is widely used in a vast number of disciplines and it is imperative that students in Brunei Darussalam are able to interpret and use data presented to them. This study aimed to determine the level of students' competence in secondary school statistics and henceforth to investigate their level of statistical literacy. We also examined two factors, confidence and attitudes, and their effects on students' achievement in statistics. The main study involved 154 Year 11 students from two government secondary schools and used both quantitative (statistics achievement test, confidence level scale and questionnaire) and qualitative (interview) methods of data collection. The low mean percentage test score (35.5%) and the low passing rate (25.3%) from the results of the achievement test showed that some students were not competent enough in their secondary school statistics and thus, indicated a low level of statistical literacy. This is something educators need to be aware of because these students would struggle to interpret data when they leave school for employment and life in the real world. From the results of the confidence level scale included in the achievement test and the questionnaire on students' attitudes towards statistics, the findings also showed how strongly 'confidence' (Pearson $r = 0.656$) and 'attitudes' (Pearson $r = 0.613$) correlate with students' achievement. A majority of the students were confident with their responses (64.3%) and had positive attitudes (81.8%) towards mathematics and statistics. However, there were instances where confident students did not pass their test. Similar pattern was also observed for many of the students with positive attitudes. It may be said that having positive attitudes did not necessarily show that the student would pass the test; rather, they just perform a little bit better. The high number of students with positive attitudes may be because students actually like and enjoy learning the topic. They probably see statistics as a topic that is connected to their everyday experiences and was able to see the relevance of statistics. Mathematics teachers are recommended and encouraged to teach statistics in such a way that will arouse their students' interests, and also assist their students to become more competent in statistics and achieve a much higher level of statistical literacy.

Keywords: Statistics, secondary schools, Brunei Darussalam