The Effect of Penalizing Wrong Answers in the Computerized Modified Multiple Choice Testing System

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Abstract : Even though assessment using information and communication technology will most likely lead the future of educational assessment, there is little research on this topic. Computerized assessment will not only cut costs but also measure students' performance in ways not possible before. In this context, this study introduces a tool which can overcome the problems of multiple choice tests. Multiple-choice tests (MC) are efficient in automatic grading, however structural problems of multiple-choice tests allow students to find the correct answer from options even though they do not know the answer. A computerized modified multiple-choice testing system (CMMT) was developed using the interactivity of computers, that presents questions first, and options later for a short time when the student requests for them. This study was conducted to find out whether penalizing for wrong answers in CMMT could lower random guessing. In this study, we checked whether students knew the answers by having them respond to the short-answer tests before choosing the given options in CMMT or MC format. Ninety-four students were tested with the directions that they will be penalized for wrong answers, but not for no response. There were 4 experimental conditions: two conditions of high or low percentage of penalizing, each in traditional multiple-choice or CMMT format. In the low penalty condition, the penalty rate was the probability of getting the correct answer by random guessing. In the high penalty condition, students were penalized at twice the percentage of the low penalty condition. The results showed that the number of no response was significantly higher for the CMMT format and the number of random guesses was significantly lower for the CMMT format. There were no significant between the two penalty conditions. This result may be due to the fact that the actual score difference between the two conditions was too small. In the discussion, the possibility of applying CMMT format tests while penalizing wrong answers in actual testing settings was addressed.

Keywords : computerized modified multiple choice test format, multiple-choice test format, penalizing, test format
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