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Investigating the effect of online tests on physiological arousal during math tests in college students

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Abstract

Test anxiety is related to poor performance, low self-esteem, and evaluation anxiety in students (Hembree, 1988) as well as physiological arousal through increased skin conductance response and increased heart rate (Holroyd, Westbrook, Wolf & Badhorn, 1978). Students with testing anxiety found this anxiety lessened while taking online exams (Stowell & Bennett, 2010). However, the effect of online testing on math testing anxiety has not yet been examined. Exploring this relationship is important due to the recent online option of heavily weighted tests, such as AP exams and the SAT, where math score is a large factor in success. Participants (60) were selected from introductory psychology courses at Belmont university. We investigated the effect of subject material and testing format on physiological arousal variables related to testing anxiety: heart rate and skin conductance response. Our study is a mixed design. The independent variable of testing format is between subjects, while the independent variable of testing type is within groups. The independent variables will be the type of test given (multiplication table vs. animal naming) as well as the testing format (paper test vs. online). The dependent variables will be the change in heart rate and the change in skin conductance. It is predicted that paper tests will have a higher stress response than the electronic test. It is also predicted that the math test will have a higher stress response than the animal test.

Key Words: Test anxiety, stress response, skin conductance, heart rate