

**Stress and anxiety in education** (chair: Anita Pásztor-Kovács)

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**THE EFFECT SIZE OF PLAYING GOOGLE DINOSAUR ON TEST ANXIETY –  
A REPEATED MEASURE STUDY**

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Uniting the self-determination theory of motivation and the specific anxiety theory in the approach of cognitive interference model of test anxiety and attentional control theory, it is argued that the level of experienced test anxiety can be reduced by an intrinsically motivational computer game through the three basic psychological needs which are related the three aspects of test anxiety. The aims were to support the hypotheses that playing with a computer game (Google Dinosaur) has (H<sub>1</sub>) negative effect size on test anxiety, (H<sub>2</sub>) positive effect size on intrinsic motivation; (H<sub>3</sub>) test anxiety is predicted by intrinsic motivation; and the aspects of test anxiety are predicted by the basic psychological needs (H<sub>4</sub>: thoughts by competence, H<sub>5</sub>: off-task behaviour by relations and H<sub>6</sub>: autonomic reactions by autonomy). A repeated measure study had been undertaken to test the assumption, with a control group (N = 104, 60 females, 44 males, M<sub>age</sub> = 26.63 years, SD<sub>age</sub> = 8.44 years) and an experimental group (N = 26, 15 females, 11 males, age M<sub>age</sub> = 28.54, SD<sub>age</sub> = 6.54 years). The instruments used twice are the Children Test Anxiety Scale (CTAS), with other assessments of test anxiety measuring its convergent validity, as well as the Basic Psychological Needs of Satisfaction and Frustration Scale (BPNSFS) measuring intrinsic motivation. The experimental group had to play at least one round of Google Dinosaur before they started to fill in the same, second questionnaire. At least 24 hours were spent between the two occasions. Data were collected between 7 June and 2 October 2022 with a Google questionnaire. In this study, t-tests, linear regression models and Cohen's d effect sizes were run. Three hypotheses are supported (H<sub>1</sub>: playing with Google Dinosaur has negative effect size on test anxiety,  $t_{(25)} = -4.179$ ,  $p < .001$ , Cohen's  $d = .41$ .; H<sub>3</sub>: test anxiety is predicted by intrinsic motivation,  $R^2 = .11$ ,  $F = 13.11$ ,  $p < .001$ ; H<sub>4</sub>: the thoughts aspect of test anxiety is predicted by the basic psychological need for competence,  $R^2 = .14$ ,  $F = 16.44$ ,  $p < .001$ ). H<sub>2</sub>, H<sub>5</sub> and H<sub>6</sub> were not supported. The study suggests that test anxiety can be reduced by playing a short computer game like Google Dinosaur. However, the exact relations between the game, motivation and test anxiety remain unclear. Possible explanations and future steps are discussed. There is a controversy with studies claiming the connection between anxiety and school performance is curvilinear (following the argument of the Yerkes-Dodson law) or linear. The argument of this study is that the test anxiety of intrinsically motivated people is associated to school performance in linear way. Therefore less test anxious people (whose test anxiety is reduced by motivation) would perform better on tests, increasing the well-being of students and the effect of teaching as well.