

EXAMPLE SUMMARY OF RESEARCH PROCEDURES
(question #19 on protocol form)
Cabrini University Institutional Review Board

Working Memory, Anxiety and Academic Performance: The Role of Various Distractors

NAME, Primary Investigator

Student Researchers/Other Collaborators or Persons Involved in the Project: NAMES HERE

Description

This study will examine the role of various distractors on students' academic performance. Research has shown that increased anxiety can tax a student's working memory (WM), that is the memory responsible for holding temporary information needed to complete a task. When WM is taxed by anxiety, there is less memory available to attend to the task at hand causing a higher number of errors. Research has shown that the increase number of errors caused by anxiety are equal to the number of errors caused by other distracting stimuli such as constant interruption while completing a task. In this study we will examine the effect of anxiety, and visual, auditory and kinesthetic distractors on students performance with a reading comprehension test and Spanish test. The study will be overseen by NAME, PI and conducted with seven students from her Research Methods course this semester who are listed at the top of this document.

Participants

Data will be collected from students in the psychology research participation pool (approximate $n=200$). The research participation pool includes students enrolled in PSY courses. Each PSY student is required to participate in one hour of research during the semester. The psychology department distributed information about the participation pool to all faculty teaching PSY courses on campus (no high schools) and this was included in all syllabi and announced at the beginning of the semester. Students receive credit in each PSY course, determined by their individual instructors, for participation. The PI is responsible for oversight of the participation pool, tracking student completion, and reporting this information to all PSY faculty.

Procedure

After entering the lab, students will log onto a computer where they will complete a working memory test, two anxiety scales, report their typical rate of exercise, and then rate the visual and musical stimuli to be used in the distraction portion of the study. Students will then complete an online reading comprehension test and introductory level Spanish test. While completing the tests, various distractors will be presented. After completing the tests, students will complete the general anxiety scale a second time and demographics.

Visual distractors

A series of 15 visual distractors will be randomly displayed during the reading comprehension test for a length of 10 seconds each. To test the effect of various types of visual distractors, images were chosen to be negative (e.g., broken down car), neutral (a pile of bricks) and positive (e.g., a kitten smelling a flow). Students will view either the negative ($n=5$), neutral ($n=5$) or positive ($n=5$) images.

Musical distractor

Students in the music condition will be exposed to music during the exam. The music will be played continuously. The musical clips will be from Symphony No. 40 in G minor, K. 550 by Mozart or a karaoke version of German War-Machine by Debauchery

Kinesthetic distractor

To interrupt students' in a kinesthetic way, they will be asked to stop where they are on the test and complete 10 jumping jacks on three occasions (minute 3, 8 and 13) while completing the tests. This process will be tested one time prior to starting the comprehension test to ensure that students have able space and are able to complete the jumping jacks.

Measures

Each measure to be used is described briefly below. Each measure can be accessed online using the links below.

- The working memory test can be accessed here: testable.org/t/363f3d22b
- The anxiety scales, visual and music rating scale as well as exercise related questions can be accessed here: <https://goo.gl/forms/s4NBhluV5Z0Nj6G12>
- The demographics can be accessed here: <https://goo.gl/forms/9njDNO2IIKGyJahs1>
- The reading and Spanish comprehension tests can be accessed here: testable.org/t/363a8abb3

Working Memory Test

We will utilize a working memory test called the “N-back” test. The test is used to measure the strength of the participants’ working memory by using a series of images, asking participants to match an item they see on the screen to items they saw on past screens. Importantly, participants should respond when the image matches the image on two screens prior making this a dual n-back test, as the participants were asked to keep two images in their working memory. The images consisted of a car, spoon, fish, etc. and were all cartoons.

Anxiety Scales

A general an anxiety scale by Spitzer, Kroenke, Williams, & Lowe (2006a) will be used. The scale consists of 7 items each answered on a scale of 0 to 3, with 0=“Not at all” and 3=“Nearly every day.” The questions asked about the participant how often participants felt “nervous, anxious or on edge” and “afraid as if something awful might happen” over the last two weeks, and other similar questions about nervousness and anxious feelings. The validity of the general anxiety disorder scale was assessed and had a very high internal consistency (.92) and good validity as well (Spitzer, Kroenke, Williams, & Löwe, 2006b).

The Foreign Language Reading Anxiety Scale (FLRAS) by Saito, Garaza, and Horwitz will be used. This survey asks the participant(s) a series of twenty questions about how they feel when they read in the target language, Spanish. It has the participant rank the way they feel about each

question from (1) strongly agree to (5) strongly disagree. The FLRAS does show that it has a high internal reliability with a coefficient of (.86) (Saito, Garza, & Horwitz, 1999).

Comprehension and Spanish Tests

We will use a free comprehension test available online (see: <https://www.testprepreview.com/modules/reading1.htm>). The students will be given 15 minutes to work on the comprehension test. The test has 45 questions and has been adapted on an online platform so that we can collect responses. We chose a test of this length to ensure that participants who work more quickly will not run out of questions during the testing time so that they can be continually tested on each distractor trial.

The Spanish test was made available by Dr. Raquel Green of the Cabrini University Department of Romance Languages and Literatures. The test is brief and contains five questions.