Listen to the Music: Introducing Music to Reduce Test Anxiety and Improve Test Performance

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Introduction/Need for Innovation

The concept of academic performance anxiety is nothing new to higher education. Students are now experiencing multiple types of anxiety which play a large part in determining academic success in addition to memory, cognitive controls, and various motivational and emotional factors (Beilock & Ramirez, 2011). Cognitive test anxiety is one of the leading issues facing college students today affecting approximately 20% of all students (American Test Anxieties Association, 2019) and has been found to be most prevalent among females, students with high emotionality, and students with high performance worry (Cassady & Johnson, 2002; Hembree, 1988). While there are numerous factors affecting the exam performance of college students including preparation, intelligence, test-taking ability, and luck, test anxiety can have a major impact on students' academic performance with up to an 8% variance in test scores related to test anxiety (Cassady & Johnson, 2002). Additionally, Farooqi (2012) found that high test anxiety tends to lead to poorer academic performance in students and suggested therapeutic interventions be implemented in academic institutions to minimize anxiety levels.

Research has shown music can help individuals overcome anxiety and accomplish more difficult tasks (Perlovsky et al., 2013). For test anxiety, multiple studies have found that listening to pleasant, calming music can lead to higher academic performance (Lilley et al., 2014; Perlovsky et al., 2013). This has led to recommendations of further incorporating music during exams to minimize stress and anxiety. While this is not necessarily a new idea, the rising anxiety levels of college students have created a need for interventions to be explored to promote the success of students in academic programs. Reducing student performance anxiety could lead to more meaningful and engaged learning experiences for students, which is the focus of Priority Area 4 of the AAAE National Research Agenda (Roberts et al., 2016).

How it Works

As anxiety and outside stresses continue to increase and draw on added pressures of current students, the idea of using music as a way to reduce test anxiety was developed and tested on a small scale. The instructor of an agricultural economics course at Texas Tech University made the decision to play relaxing study music during exams to see what impact it had on students' performance. As most classrooms at Texas Tech University are equipped with a computer and speakers, this was a feasible and easy to implement idea. The music entitled "Relaxing Music for Studying and Concentration" was found on YouTube.com. The instructor played the music for the duration of each exam at a low audible level for students to hear but not act as a distraction.

Results to Date

The addition of music to this class was added during the second exam of the fall semester and both exams of the spring section. The instructor observed students as they completed their exams. When the music was played, students spent more time on the exams; the occurrence of students leaving before completing the exam was eliminated. Prior to playing music, students often left early in the exam period, sometimes as early as 15 minutes after the exam was handed out. Students in the course also expressed preference for having the music play during exams and even inquired when the professor forgot to press play during the second exam.

The reported data reviewed exam scores over 7 semesters with 1.5 of them including scores with music intervention; this data showed exam scores increased overall (Table 1). For Exam 1 scores

from the fall semesters, students averaged 80.5%. There is no data for Exam 1 scores with the music intervention as it was implemented during the second exam in this semester. The fall Exam 2 scores without music averaged 84.5%, and exam scores with the addition of music averaged 90.6% showing a 7.2% increase. The Exam 1 scores showed students averaging 81.8% without music and 86.6% when music was incorporated. This showed a 5.9% increase in exam scores. The Exam 2 scores from the spring resulted in an 80.9% average without music and 88.3% average with music expressing a 7.3% increase in exam scores.

Table 1

Average Exam Scores and the Incorporation of Music

Exam Scores	Without Music	With Music	% Increase
Fall Exam 1	80.5	-	-
Fall Exam 2	84.5	90.6	7.2
Spring Exam 1	81.8	86.6	5.9
Spring Exam 2	80.9	88.3	7.3

Future Plans/Advice to Others

The addition of music during exams in this course provided an atmosphere in the classroom which encouraged a more productive environment to evaluate students' knowledge. The observations of the testing environment reinforced the idea to add music, which reduced test anxiety. The increased exam scores, time spent on exams and completion rates has encouraged the instructor to continue implementing music during exams to provide a motivating and calming environment for students to excel. This will provide an opportunity for the instructor to minimize outside factors and test for students' knowledge of course material. Future assessment of the use of music during exams will include examining student opinions to ensure this intervention is well received. The addition of music to the exam environment will continue to be evaluated and will be encouraged in other courses throughout the Department of Agricultural and Applied Economics and College of Agricultural Sciences and Natural Resources at Texas Tech University. For implementation in other atmospheres, it is important to check for adequate resources to play music and find the desired calming music beforehand. Additionally, inform students beforehand and make arrangements if major aversions to this implementation arise.

Costs/Resources Needed

As many higher education classrooms are already equipped with a computer, speakers, and internet access, this concept should be simple and free of cost to apply in future classrooms. A wide variety of music is available through many free online outlets, including YouTube, Pandora, Spotify, and many others. As long as the instructor has a working knowledge of any of these online music outlets and the classroom technology, the addition of soft music to create a calming test environment and ease test anxiety may allow instructors to more accurately evaluate students' subject knowledge and mastery of course material with minimal or zero cost.

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