

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

Larrah Welp
Graduate Assistant
806-834-6288
larrah.welp@ttu.edu

Dr. Courtney Gibson
Assistant Professor
806-834-8766
courtney.d.gibson@ttu.edu

Department of Agricultural Education and Communications
Texas Tech University
Box 42131
Lubbock, TX 79409

Dr. Conrad Lyford
Professor
806-834-6881
conrad.lyford@ttu.edu

Department of Agricultural and Applied Economics
Texas Tech University
Box 42132
Lubbock, TX 79409

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, Cabanac, Bonniot-Cabanac, & Cabanac, 2013). For test anxiety, multiple studies have found that listening to pleasant, calming music can lead to higher academic performance (Lilley, Oberle, & Thompson, 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, Harder, & Brashears, 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 was found on YouTube.com and was entitled "Relaxing Music for Studying and Concentration." The instructor played the music for the duration of each exam at a low volume level that was barely audible to students so that it could be heard but was not a distraction during the exams.

Results to Date/Implications

During both exams given in each semester of this course, the instructor observed students as they completed their exams. It was noted that when the music was played students spent more time on the exams, and the occurrence of students leaving before the exam was complete was eliminated. Prior to playing the music, students often left very early in the exam period, sometimes as early as 15 minutes after the exam was handed out. Students in the course also expressed their preference for having the music played during their exams and even asked the instructor to play it during the second exam when he forgot to turn it on at the beginning of the exam period.

When looking at the average exam scores following the two semesters in which music was introduced into the testing environment, exam scores increased overall (Table 1). The data reported reviews exam scores over seven semesters with 1.5 of them including scores with music intervention. 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. When looking at the scores from Exam 1 in the spring semesters, students averaged 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 and capability. The desire for music expressed by students and the increased completion rate of the exams reinforced the instructor's idea of adding music to reduce test anxiety. The exam scores following the introduction of music during the exams showed a noteworthy increase in scores. Additionally, the increased time students spent on their exams and the increased completion rate has encouraged the instructor to continue implementing music during exams to provide a motivating and calming environment for future students to excel. This will provide an opportunity for the instructor to minimize outside factors and stresses 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 and the College of Agricultural Sciences and Natural Resources at Texas Tech University.

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.

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