

5-1996

The Effect of Background Music on Reading Comprehension Test Scores

Ann S. DeMers
The College at Brockport

Follow this and additional works at: http://digitalcommons.brockport.edu/ehd_theses

 Part of the [Education Commons](#)

To learn more about our programs visit: <http://www.brockport.edu/ehd/>

Repository Citation

DeMers, Ann S., "The Effect of Background Music on Reading Comprehension Test Scores" (1996). *Education and Human Development Master's Theses*. 111.
http://digitalcommons.brockport.edu/ehd_theses/111

This Thesis is brought to you for free and open access by the Education and Human Development at Digital Commons @Brockport. It has been accepted for inclusion in Education and Human Development Master's Theses by an authorized administrator of Digital Commons @Brockport. For more information, please contact kmyers@brockport.edu.

**THE EFFECT OF BACKGROUND MUSIC ON
READING COMPREHENSION TEST SCORES**

THESIS

**Submitted to the Graduate Committee of the
Department of Education and Human Development
State University of New York
College at Brockport
in Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Education**

by

Ann S. DeMers

**State University of New York
College at Brockport
Brockport, New York**

May 1996

SUBMITTED BY:

Ann S. O'Neil 4/19/96
APPROVED BY: Date

Arthur E. Smith 4/19/96
Project/Thesis Advisor Date

Susan Z. Begg 4/29/96
Second Faculty Reader Date

Patricia E. Baker 4/24/96
DIRECTOR
Chairman, Graduate Studies Date
Policies Committee

"No information derived from this thesis
may be published without permission of the
original author, with whom copyright lies."

Abstract

The purpose of this study was to investigate the effect of background music on reading comprehension. Would the playing of background music positively affect the scores on a reading comprehension test?

A statistical analysis of pretest scores from the *Degree of Reading Power* test revealed that both classes were of equal reading ability at the onset of the study.

The experimental classroom listened to Mozart's Concerto No. 21, C Major, K. 467 for several weeks prior to the study being conducted, during *Sustained Silent Reading* time.

The *Metropolitan Achievement Test - Form L* was administered to both classes as a practice. This was done to familiarize the experimental group with background music during a testing situation. *Form M* of the *Metropolitan Achievement Test* was administered several days later to both groups. A two-tailed t test of the post test scores showed a statistically positive difference in the test scores favoring the experimental group.

The experimental group with background music performed significantly better on the reading comprehension test.

I wish to dedicate this thesis to my husband David.
Without his patience and understanding none of this would have
been possible.

I would also like to thank several people at Barnard School
who made this study possible; Gerald Hickey (principal), Joyce
Kempka and Mary Jean Kulas. These people generously offered
their school and classrooms.

Thank you

Table of Contents

	Page
List of Tables	iv
 Chapter I	
Statement of the Problem	1
Purpose of the Study.	1
Need for the Study	1
Definition of Terms.	2
Summary	3
 Chapter II	
Review of the Literature.	4
Introduction.	4
Emotions - Anxiety.	4
Music - Overview.	7
Music and Academic Performance.	8
Choice of Music.	13
Music and Spatial Performance	13
Summary	15

Table of Contents (Continued)

	Page
Chapter III	
Design of the Study.	16
Purpose	16
Null Hypothesis	16
Methodology.	16
Analysis of Data	19
Summary	19
Chapter IV	
Findings and Interpretations of Data.	20
Purpose	20
Analysis of Data	20
Summary	24
Chapter V	
Conclusions and Implications	25
Implications for the Classroom.	26
Implications for Research	27
Summary.	28
References.	29

List of Tables

Table	Page
1. t test of difference between the Experimental Group and the Control Group on the mean reading pretest scores from the <i>DRP</i> - January, 1996.	21
2. t test of difference between the Experimental Group and the Control Group on the mean reading posttest scores from the <i>MAT - Form M</i>	22
3. Post Hoc Analysis	23

CHAPTER I

STATEMENT OF THE PROBLEM

PURPOSE OF THE STUDY

The purpose of this study was to investigate the effect background music had on reading comprehension.

This study sought to answer the question: Will the listening of background music (Mozart) positively effect the scores of the reading comprehension portion of the *Metropolitan Achievement Test*?

NEED FOR THE STUDY

Some students become apprehensive when they have to read in a testing situation. "A growing body of evidence has documented the test-anxious individual's tendency to focus on negative cognitions about the self, often to the detriment of actual test performance" (Blankstein and Flett, 1990, p. 189). Can the playing of music, particularly Mozart, reduce a student's apprehension and therefore increase his or her performance? Studies of the effect music has on students' while performing academic and physical tasks shows a positive correlation between

students who are classified as learning disabled and academic achievement. Music therapy grew out of these positive results. Will music enhance academic performance in a regular heterogeneously-mixed classroom?

DEFINITION OF TERMS

Music Therapy - a method of treatment that can furnish a powerful means of self-expression. Music signifies a way for people to communicate with one another (Nagler, 1989).

State Anxiety - or negative short-term responses to a specific stimulus (Spielberger, 1983).

Trait Anxiety -relatively enduring characteristic describing a person's general level of anxiety (Spielberger, 1983).

Test Anxiety - an uneasy feeling or emotional state that causes physiological or behavioral conditions that are experienced in formal testing or other evaluative situations. When a student experiences test anxiety a variety of attention and cognitive processes are called into play that interfere with successful and effective test performance (Dusek, 1980).

Spatial Reasoning - the ability to perceive the visual world accurately. To be able to recognize variations of objects and to form and transform mental images (Rauscher, Shaw Ky, & Wright, 1994).

SUMMARY

This study was an attempt to determine a significant relationship between the playing of background music and reading comprehension. Test anxiety is a problem that many students experience. It was theorized that the playing of background music would relieve some test anxiety and therefore students would perform better in a testing situation.

CHAPTER II

REVIEW OF THE LITERATURE

INTRODUCTION

Anxiety is a part of everyone's day to day life. It can be a motivator to get things done, or it can be an inhibitor. A student who is anxious may exhibit test anxiety and perform worse in testing situations. When anxiety becomes excessive, it retards learning. Music can increase spatial reasoning and relax students. By relaxing, the anxious student may perform better in a testing situation.

EMOTIONS - ANXIETY

"What's your EQ? It's not your IQ. It's not even a number. But emotional intelligence may be the best predictor of success in life, redefining what it means to be smart. New brain research suggests that emotions, not IQ, may be the true measure of human intelligence" (Gibbs, 1995, p.60). Gibbs also found that if a person's emotional level changes, so does his or her IQ score.

Trait anxiety is part of a person's personality. Excessive

trait anxiety can inhibit a person's academic and social performance, as well as, his or her overall well-being (Proeger, 1980). State anxiety is induced by a particular event such as a new situation, giving a speech, or taking a test. If a person becomes overly anxious it can impede his or her overall performance on a given task (Proeger, 1980).

Anxiety causes some elementary students to perform below their ability levels. Anxiety affects students of all ability levels and is a predictor in reading grades. Proeger (1980) suggests that the underachieving student has been found to be more anxious, aggressive, hostile, and to have poor relationships with teachers and their peers.

Students who experience test anxiety are experiencing a special case of state anxiety. Test anxiety is a form of state anxiety that is associated with concern about possible failure, accompanied by coping behavioral responses. Strumpf (1993) reported that a higher level of test anxiety is found among minority and disabled students. Dusek (1980) states that test anxiety interferes with successful test performance. Test anxiety hampers the performance of students at all ability levels.

Gaudry and Bradshaw (1971) tested a seventh or eighth grade class in 14 government schools in Melbourne, Australia. Each class contained at least 24 students. The students were

given a formal intelligence test and the Test Anxiety Scale for Children (TASK). Scores were compared using the results of a formal exam held at the end of the first term and progressive marks. The progressive marks were the mean for each pupil on at least three progressive assessments. The low-anxious student performed better than the high-anxious student. High anxiety had a less interfering effect under progressive examining than under a formal test. This supports the claim made by Sarason, Davidson, Lighthall, Waite and Ruebush (1960) that test anxiety has a negative effect on formal testing situations in highly anxious students.

Several studies have shown that changes in anxiety level are related to changes in IQ scores. Sarason et al. (1960) studied the relationship between anxiety and IQ in a group of 670 elementary school children for a period of five years. They found that increases in anxiety were related to decreases in IQ test performances, while decreases in anxiety were related to increases in IQ test performance.

Blankstein, Flett, and Watson (1992) found test-anxious students had a poorer ability to solve academic problems. Relaxing can reduce test anxiety and improve grades (Allen, 1973). One way to reduce anxiety in students may be to play background music during a testing situation.

MUSIC - OVERVIEW

"Music is a universal language - it speaks to everyone - it is the birthright of all. Music has a limitless range; it has the ability to cross racial, religious, cultural and emotional lines" (Stokowski, 1943, p.13). Strauss (1985) felt that there is nothing more emotionally powerful than music. It expresses all of our emotions and sets us free deep within our souls. Music can be used for more than listening pleasure. It can help rest and relax us at the deepest levels of our being.

"Scientists are discovering that vibration and sound are the basis of all manifest life, though what we can hear and see constitutes less than a millionth part of the inaudible sound and invisible light" (Priestley, 1975, p.45).

In 1944 the Music Research Foundation was formed. Its primary purpose was to advance scientific research into the use of music relative to medical treatment. Changes in music intensity, rhythm, and dissonant chords produces changes in respiration, blood pressure, and pulse. Music increases or lessens muscular activity and affects the circulatory and digestive systems. A correlation between music and mood: happy, sad, feelings of rest, and love was found. Strauss (1985) found that music contained "healing powers" and improved listening, motor, and social skills.

Relaxing music has many characteristics: rhythm, tempo, pitch, tone, melody, harmony, and dynamics. The rhythm of relaxing music is smooth and flowing without any sudden changes. Robb, Nichols, Rutan, Bishop, and Parker (1995) suggests the tempo of the music should be sixty beats per minute (at or below a resting heart rate). The pitch of the music needs to be low to promote relaxation. Flutes, strings, voice, and the use of softer instruments are recommended for tone. Melodies that progress step by step, slow, and sustained produce the most beneficial results (Robb et al., 1995).

MUSIC AND ACADEMIC PERFORMANCE

A study by Scott (1970) was prompted by his observation of the use of background music having a calming effect on the behavior of hyperactive, learning-disabled children in a special education classroom. Scott (1970) studied four boys ranging in ages from 7-11 and having IQ's from 89 to 97. These students' troublesome behavior was attributed to "hyperactivity." He conducted a measure of the students' academic productivity in four different settings. In the first setting the students sat at their desks in an open area, (similar to a regular public school classroom). The second situation was the same as the first, except background music was played during the academic

9

assignment. In the third condition, the students were seated in a three-sided booth. The fourth condition was the same as the third, except background music was played during the assignment. The researcher found that the students functioned best in the normal classroom with background music quietly playing. In conclusion, the playing of background music was found to enhance academic performance of hyperactive children. The Beatles albums entitled "Sgt. Pepper's Lonely Hearts Club Band" and "Magical Mystery Tour" were used because of their popularity with the students.

In another study, Summers, Hoffman, Neff, Hanson, and Pierce (1990) selected 45 baccalaureate nursing students to test the effect of 60 beats per minute on test anxiety. Music metered at 60 beats per minute was used as a method to operationally define music. The lack of specific beats was seen as a weakness in replication of other studies. Data were collected in a school of nursing from students enrolled in the maternal health nursing course who served as the control group. Students enrolled in the nursing of children course served as the experimental group. Both courses were comparable in depth of content and expectations. Both groups were pretested for State and Trait Anxiety prior to the study. On the day of the experiment, both groups of students took a regular course examination in their

separate classrooms. The experimental group listened to 60 beats per minute background music during the exam: the control group did not. Results showed the music having a relaxing effect on 8 out of the 21 students who stated that the music helped them feel relaxed during the test. Music kept them from hearing distracting background noise. Twelve students stated the music was a distraction and they listened to the music instead of concentrating on the test. One remaining student stated that the music could possibly have a relaxing effect but it was played too loud during the testing. No significant difference was noted between STATE and TRAIT scores between the two groups. However, a difference was noted in the pre and post-course exam effect on students' pulse rates. The experimental groups post-test pulse rates were lower, indicating a reduced state of anxiety (Summers et al., 1990).

Hall (1952) studied the effect of background music on the reading performance of 278 eighth and ninth grade students. Students from five study halls completed the vocabulary and paragraph sections of the Nelson Silent Reading Test. Two forms of the test were administered. Form A was given under the no music condition and Form B was administered using background music. The music used was "standard prescribed for music in industry." The standards used were not given. Hall reported that

48 percent of the students increased their total scores when music was played. Hall also noted that students with below average IQ's and achievements increased their scores the most with background music played. Background music aided reading comprehension the most at certain times of the day, beginning of the morning and afternoon sessions, and mid-afternoon fatigue periods.

The effect of music on reading comprehension was researched by Fogelson (1973). This study used 28 eighth graders in two English classes. Both groups took the Iowa Test of Basic Skills for eighth graders. The experimental group listened to music by Mantovani entitled Favorite Show Tunes while taking the test. Fogelson found the experimental group did worse than the control group on the test. This suggests that the students found the music distracting or the type of music used may have had an adverse effect.

Morton, Kershner, and Siegel (1990) investigated the effect of music on memory and attention with 16 average achieving 10 to 12 year-old male students. Students completed a listening task with exposure to quiet and exposure to music. The results suggested that prior exposure to the music reduced distractibility and increased memory capacity. Morton et al. (1990) concluded that children with short-term memory difficulties because of

anxiety or personality may benefit from exposure to music prior to certain tasks that require short-term memory processes.

Unfamiliar sounds (music) can be a distracter to students on reading comprehension tests. A study by Etaugh and Michals (1975) reported students who studied to music were less distracted by music in a testing situation than students who reported not studying to music.

Verneti and Jacobs (1972) studied the effect of classical music on the math performance of learning disabled students. Fifty-three students were asked to complete 20 math problems in a five minute period daily for eight days. This problem solving was done under both a music (Tchaikovsky's "Nutcracker Suite") and non-music condition. No difference was found in the accuracy of the student responses. Verneti and Jacobs believe the results indicate that students function in a noisy environment.

Mixed results were reported by McIntyre and Cowell (1984) in their review of the research in the effect music has on academic performance. These researchers felt that the studies conducted up to 1984 failed to show a consensus in academic performance of students with special needs. Mixed results were reported and may have been due to the methodology, time, and design of the studies.

CHOICE OF MUSIC

Thaut and Davis (1993) researched the influence of experimenter versus subject-selected music on affect, anxiety, and relaxation. Fifty-four students ranging in age from 18-23 were chosen for this study. Some of the students selected their listening music, some of the students had no music, and the rest of the students listened to experimenter-chosen music. Music that claimed it was composed specifically to increase relaxation and relieve tension was used for this study. Students completed the Spielberger State Anxiety Inventory and the Multiple Affective Adjective Checklist. The experimental groups listened to music of their choice or that of the researchers for 15 minutes. The control group sat quietly in a recliner for 15 minutes. After the listening of the music was complete, the groups took the same tests. "In summary, both subject-selected music and experimenter-chosen music induced significant relaxation responses in the population under study" (Thaut & Davis, 1993, p. 221). No relaxation response was noted in the control group.

MUSIC AND SPATIAL PERFORMANCE

A number of studies were performed at the University of California at Irvine in regards to spatial performance increasing

after students have listened to Mozart. One study done by Rausher, Shaw, and Ky (1993) reported students performing better on the abstract spatial reasoning portion of the Stanford-Binet intelligence test after listening to ten minutes of Mozart's sonata for two pianos in D major (K448). Thirty-six college students participated in this study in three different listening conditions. One group listened to Mozart for ten minutes, another listened to a relaxation tape, and another group sat in silence for ten minutes. Students' spatial reasoning skills were tested immediately following the listening conditions using the Stanford-Binet intelligence test. The enhancement of the students' spatial reasoning (Mozart group) was temporary, lasting only 10-15 minutes.

Noting the effect in the college students was short-termed, Rausher, Shaw, Ky, and Wright (1994) wanted to test the theory of starting musical training at an early age (while the brain is still plastic) to see if that would have a long-term effect on spatial skills. They conducted a study involving nineteen, three-year-olds children who were given music lessons for eight months. Music lessons consisted of singing and individual instruction. The experiment group showed a "dramatic" increase in their spatial reasoning scores of putting a puzzle together. The other four tasks the group were given did not show any "dramatic" increase.

The "dramatic" increase in scores for solving a puzzle is attributed to that being the only task tested that required the ability to visualize the development of a pattern.

In future studies, Rausher, et al. will investigate the coherent patterns of subjects listening to Mozart versus other musical works. They want to predict specific music work that will enhance abstract reasoning. Ultimately with these studies Rausher, et. al. hope to revitalize the role music plays in public education. Music training seemed to enhance the preschoolers intellectual development. Future studies will determine if this was temporary or has a long-term effect.

SUMMARY

Test anxiety is an emotional state that causes many students to perform negatively in school. Research has shown that music can have a relaxing effect on students and that students can perform better when it is played. However, music can be a distracter if a student has not been exposed prior to a testing situation.

Rauscher et al. (1994) determined that the playing of Mozart helped to increase the spatial reasoning of college students. They also found that preschoolers given music lessons increased in their ability to perform spatial tasks.

CHAPTER III

DESIGN OF THE STUDY

PURPOSE

The purpose of this study was to see if the playing of background music, specifically Mozart, during a reading comprehension test would positively affect students' performance.

NULL HYPOTHESIS

There will be no statistically significant difference between the mean post test scores of the control group and the experimental group on the reading comprehension section of the *Metropolitan Achievement Test-Form M*.

METHODOLOGY

Subjects

This study used 44 fifth grade students from two heterogeneously mixed classrooms in a suburban, public elementary school in western New York.

Instruments

Metropolitan Achievement Test (MAT)- Intermediate Level
Reading Survey Tests - Forms L & M

Mozart - Piano Concerto No. 21, C Major, K. 467

Procedures

Mozart Piano Concerto No. 21, C Major, K.467 was used as background music. This selection was recommended by Strauss, (1985) and Dr. Josepha Kennedy, S.S.J., from Nazareth College in Rochester, NY as relaxing type music. It also met the specifications of relaxing music as outlined by Robb, Nichols, Rutan, Bishop, and Parker (1995).

Students in the experimental group were exposed to Mozart’s Piano Concerto daily for three weeks prior to this study. The classroom teacher played background music (Mozart) softly during *Sustained Silent Reading*. This was done to familiarize the students with the playing of background music while reading. Prior exposure to music conditioned the students so background music would be less of a distracter during the test.

The *Degree of Reading Power* (DRP) test scores from January, 1996, were used to compare both classrooms. This was done to ensure that both the control group and the experimental group were of equal ability.

The reading comprehension portion of the *Reading Survey*

Test, Form L of the *MAT* was administered to both groups for practice purposes. Students were given only twenty minutes to work on this practice test. The testing for both groups was completed on the same day and at the same time. In the experimental group, background music was played while the students took the test. In the control group, no music was played. This pre-testing was done to expose the students in the experimental group to the playing of background music in a testing situation. Both groups were administered Form L to ensure each group had previous exposure to the test. This was done so no unfair advantage was given to either group. The results from Form L were not used and are not discussed in this thesis.

Three days later both groups were administered the reading comprehension portion Form M of the *Reading Survey Test* of the *MAT*. Each group was given 40 minutes to complete the reading comprehension portion of the *MAT*. Both groups were administered the testing on the same day and at the same time, late morning by their regular classroom teachers. The experimental group listened to Mozart while completing the *MAT* - Form M. The control group completed the testing with no background music.

ANALYSIS OF DATA

Results from Form M from the *MAT* were quantitatively calculated, and comparisons between the control group and the experimental group were calculated. Qualitative results are also discussed.

An independent t test was used to compare the mean reading comprehension scores between the control group and the experimental group.

SUMMARY

This study was done to examine the effects of background music on reading comprehension test scores. Test anxiety is experienced by many students. It was theorized that the playing of background music would relieve some test anxiety; and, therefore, students would perform better in a testing situation.

CHAPTER IV

FINDINGS AND INTERPRETATION OF DATA

PURPOSE

The purpose of this study was to investigate the effect background music has on reading comprehension.

This study sought to answer the question: Will the listening of background music positively effect the scores of the reading comprehension portion of the *Metropolitan Achievement Test*?

ANALYSIS OF DATA

The null hypothesis of this study states that there will be no statistically significant difference between the mean posttest scores of the control group and the experimental group on the reading comprehension section of the *MAT*.

An independent t test was used to compare the mean reading comprehension pretest scores between the control group and the experimental group. The pretest scores from the *Degrees of Reading Power (DRP)* from January 1996 were used. This was done initially to ensure that both groups were of equal ability.

The results of the t test showed that the performance of the groups was not significantly different at the onset (See Table 1).

TABLE 1

t test of difference between the Experimental Group and the Control Group on the mean reading pretest scores for the *DRP* - January, 1996.

<u>Sample</u>	<u>N</u>	<u>Mean</u>	<u>s.d.</u>
Control	21	42	9.09
Experimental	23	43	9.9

t (df=42) = 0.339

$p < .05 = 2.021$

Following the experimental group's exposure to Mozart, the MAT - Form M was administered to both groups, and the results were statistically compared. An independent t test rejected the null hypothesis indicating background music did affect reading comprehension (Table 2). A statistically significant effect was found in the reading comprehension test scores of the experimental group. Table 2 represents the mean scores of the posttest groups.

TABLE 2

t test of difference between the Experimental Group and the Control Group on the mean reading posttest scores from the *MAT-Form M*.

Sample	N	Mean	s.d.
Control	21	38.33	8.70
Experimental	23	42.65	7.12

$t (df=42) = 2.45$

$p < .05 = 2.021$

POST HOC ANALYSIS

A posttesting survey was conducted in the experimental group. The results are listed below in Table 3 (23 students).

TABLE 3

<u>Post Hoc Analysis</u>		<u>Yes</u>	<u>No</u>
1.	I liked background music being played during the testing.	9	14
2.	I didn't notice music being played while I was taking the test.	9	14
3.	I found it hard to concentrate with background music playing while I was taking the test.	7	16
4.	I would like background music in future testing.	12	11
5.	If you answered yes to question number four, What kind of music would you prefer?		

Three students said keep the same music; 6 said more modern, faster and rock was preferred; 3 preferred rap music.

SUMMARY

A two-tailed t test was used to compare the pretest scores of the control group and the experimental group. The data results show that these two groups were equal in ability at the onset.

A second two-tailed t test was used to compare the posttest scores of these two groups. The analysis rejected the null hypothesis, indicating that background music did positively affect reading comprehension test scores.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

This study investigated the effect of background music on reading comprehension test scores. The null hypothesis was rejected and a statistical difference was found. Reading comprehension scores were higher in the experimental group with background music playing. The students had been preconditioned to the music and it did affect them positively. Music appeared to be a stress-reducer in a test-taking situation.

This study was done on a small population of students, over a short period of time. Test anxiety accumulated over six years of schooling may not be eliminated in such a short exposure time. The attempt was made to try and relieve some anxiety through the use of background music. The students in the experimental group were exposed to only one kind of music, Mozart, which they did not select.

In table three the results from the posttest survey are given. The students are split in their decision of future use of background music. The students liked music being played but some of them would have preferred different music. Future testing should look into the students' being given a choice of the

type of background music to be used. Perhaps if the student can select his or her own music overall academic performance would increase. If a student is allowed to choose his or her own listening music he or she may feel more in control and comfortable in the classroom.

IMPLICATIONS FOR THE CLASSROOM

The classroom teacher may want to have her students listen to background music during the more stressful and fatigued times of the day, beginning of the morning and afternoon sessions and mid-afternoon. Background music played softly at the beginning of the morning session was reported as helping to get students on task by the experimental teacher. The students also enjoyed listening to music during *Sustained Silent Reading* and requested that it be played if it was being used that day.

The use of music in the classroom is a tool that can enhance learning. If music will help students succeed why not use it daily in the classroom? Research reported in this thesis shows any negatives of playing music in the classroom are outweighed by the overall benefits gained.

IMPLICATIONS FOR RESEARCH

Is background music the key to helping students with special needs perform academically better? Is background music the answer to lowering a student's test anxiety? Is Mozart the type of background music that needs to be played during a testing situation, or will any type of music work? Does it make a difference in the students performance if they have the choice in the music selection? Future research needs to address these questions.

There are a lot of unanswered questions: but one thing that has come out of this research is that music was an enhancer in the overall students' performance. Music education needs to be kept in the schools and expanded.

SUMMARY

The findings of this study showed reading comprehension increased with the playing of background music. Students enjoy music in the classroom. It helps get them and keep them on task. It will behove every classroom teacher to use background music.

Students given a choice in the type of music played may feel more in control of his or her learning. This in itself may provide a positive change in students.

Educators are always looking for ways to improve. This study suggests that music is an enhancer for learning and should be employed in every classroom.

REFERENCES

- Allen, G. , (1973). Treatment of test anxiety by group-administered and self-administered relaxation and study counseling. Behavior Therapy, 4, 349-360.
- Blankstein, K. & Flett, G. (1990). Cognitive components of test anxiety: A comparison of assessment and scoring methods. Journal of Social Behavior and Personality, 5, 187-202.
- Blankstein, K., Flett, G., & Watson, M. (1992, January). Coping and academic problem-solving ability in test anxiety. Journal of Clinical Psychology, (48), 1, 37-46.
- Dusek, J. (1980). The development of test anxiety in children, in Sarason, I. G. (Ed.). Test Anxiety: Theory, research and applications. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Etaugh, C., & Michals, D., (1975). Effects on reading comprehension of preferred music and frequency of studying to music. Perceptual and Motor Skills, 41, 553-554.
- Fogelson, S. (1973). Music as a distracter on reading test performance of eighth grade students. Perceptual and Motor Skills, 36, 1265-1266.
- Gaudry, E. & Bradshaw, G. (1971). The differential effect of anxiety on performance in progressive and terminal school examinations. In Gaudry, E. and Spielberger, C. (Editors), Anxiety and Educational Achievement , (pp. 107-110). New York: John Wiley & Sons.
- Gibbs, N. (1995, October 2). The EQ factor. Time, 60-68.

- Hall, J. (1952). The effect of background music on the reading comprehension of 278 eighth and ninth grade students. Journal of Educational Research, 45, 451-458.
- McIntyre, T., & Cowell, K. (1984). The use of music and its effect on the behavior and academic performance of special students: A review of the literature. (ERIC Documentation Reproduction Service No. ED 332 447).
- Morton, L., Kershner, J., & Siegel, L. (1990, Winter). The potential for therapeutic applications of music on problems related to memory and attention. Journal of Music Therapy, 27, (4) 195-208.
- Nagler, J., & Lee, M., (1989). Music therapy using computer music technology. In M. Lee (ed.), Rehabilitation, Music and Human Well-Being, (pp. 226-240). Saint Louis, Missouri: MMB Music Inc.
- Priestley, M. (1975). Music therapy in action. St. Louis, Mo.: Well-Tempered Press.
- Proeger, C., & Myrick, R. (1980, Winter). Teaching children to relax. Florida Educational Research and Development Council, Inc. Research Bulletin: 14, (3) (ERIC Reproduction Service No. ED206 393).
- Rauscher, F., Shaw, G., & Ky, K. (1993, October 14). Music and spatial task performance. Nature, 365.
- Rauscher, F., Shaw, G., Ky, K., & Wright, W. (1994, August 13). Music and spatial task performance: A casual relationship. Presented at the American Psychological Association 102nd Annual Convention in Los Angeles, CA. August 12-16, 1994.

- Robb, S., Nichols, R., Rutan, R., Bishop, B., & Parker, J. (1995, Spring). The effects of music assisted relaxation on preoperative anxiety. Journal of Music Therapy, 32, (1) 2-21.
- Sarason, S., Davidson, K., Lighthall, F., Waite, R., & Ruebush, B. (1960). Anxiety in elementary school children. New York; John Wiley & Sons.
- Scott, T. (1969, April). The use of music to reduce hyperactivity in children. American Journal of Orthopsychiatry, 40 (4) 677-680.
- Spielberg, C. (1983). Manual for the state-trait anxiety inventory. Palo Alto, CA.: Consulting Psychologists Press.
- Summers, S., Hoffman, J., Neff, J., Hanson, S., & Pierce, K. (1990, February). The effects of 60 beats per minute music on test taking anxiety among nursing students. Journal of Nursing Education, 29, (2) 66-70.
- Stokowski, L. (1943). Music for all of us. New York: Simon & Schuster.
- Strauss, S. (1985). Inner rhythm. San Francisco: Chase Publications.
- Strumpf, J. (1993). The treatment of test anxiety in elementary school-age children; review & recommendations. Child & Family Behavior Therapy, 15, (4) 19-41.
- Thaut, M., & Davis, W., (1993, Winter). The influence of subject-selected versus experimenter-chosen music on affect, anxiety and relaxation. Journal of Music Therapy, 30, (4) 210-223.

Vernetti, C., & Jacobs, J., (1972). Effects of music used to mask noise in learning disability classes. Journal of Learning Disabilities, 5, (9), 533-537.