

Music: More Than Meets the Ear

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### Abstract

People often overlook the multiple benefits associated with music. In addition to music's entertainment value, music is able to help patients of all ages heal physically and emotionally. Research demonstrates music reduces the stress and anxiety levels that many people experience. Involvement in music can help improve students' academic success in school. Involvement also assists in the development of language skills and reasoning abilities, and it can raise students' scores on various standardized and intelligence tests. Music students develop qualities and abilities needed to succeed in everyday life. An education in music provides students with both the social skills and the work ethic required in today's society. Music courses complete students' educations by allowing students to discover the connections among standard academic classes.

### **Music in Daily Life**

What if the art of music had never been discovered? Not many people pause to imagine what life would be like without it. In a world without music, the first notable difference would be the absence of sound drifting from buildings, vehicles, and outdoor venues. The second major change would be the disappearance of the music industry. There would be no production of recordings, listening devices, or even musical instruments. Daily life would change dramatically: Listening to the radio while driving to work would no longer be an option, no one would ever have the experience of hearing a live band perform, and countries would not be able to display their pride by means of national anthems. The absence of music would greatly alter society.

Many people do not realize the overwhelming presence music has in their lives. While most people understand that music is an enjoyable hobby and source of entertainment, the majority of people are unlikely to consider the advantages of music beyond the point of its entertainment value. Listening to music and, in particular, participating in the study of music can result in many positive outcomes. Music, while commonly regarded as merely a hobby or form of entertainment, has considerable benefits in the areas of health, academics, and personal character.

### **Music in Medicine: Music Therapy**

The main benefit of listening to music is the emotional and physical healing obtained through music therapy provided by a music therapist. A music therapist is defined as a trained health professional who helps patients decrease levels of pain and stress by utilizing songs, instruments, and dances (Tufts, 2001). This practice continues to grow: The American Music

Therapy Association has over 5,000 members (Gideonse and Westley, 1998). Over 200 music therapists are employed in hospitals in the United States, and over 70 universities in the United States offer undergraduate and / or master's degrees in music therapy (Mazo, 2002). There is an increasing demand for music therapists due to the rising popularity of music therapy. Music therapy can enhance the benefits of standard medications; in some cases music therapy is even an alternative to traditional medicine. Music therapy helps improve poor health in children and adults, and it can ease stress and anxiety.

### **Dealing with Poor Health**

Numerous studies have shown the connection between music and improved health research conducted at the University of Pittsburgh Medical Center, the University of California, and New York University (Mazo, 2002; Tufts, 2001; Gideonse and Westley, 1998; Consumers, 2006). This research has demonstrated that music therapy can help treat patients with conditions ranging from cancer to labor pains. Although music therapy is not a cure for illness, it helps ease the emotional and physical pain of the experience (Mazo). Listening to music can help with minor health concerns such as getting the proper amount of sleep (Consumers). Listening to music can benefit people who experience sleep deprivation because music can ease the stress that keeps people awake at night.

### **Illness in adults.**

Researchers have conducted several studies that have examined adult health issues in relation to the benefits of music therapy. The three recurring health problems primarily discussed in music therapy research are Parkinson's disease, Alzheimer's disease, and cancer. The common benefits of music among all three illnesses are the calming aspect of music and the patients' emotional improvement. Patients suffering from Parkinson's disease have shown

improved stability and movement capabilities due to the rhythmic beat of music (Mazo, 2002). When Parkinson's patients march to the beat of the music, they are able to walk faster, take larger steps, and maintain a better balance than when they walked without the music (Tufts, 2001). In addition to the physical improvements, music improves the emotional health of Parkinson's patients and helps to reduce their level of depression (Tufts).

Alzheimer's patients who listen to music have also shown major improvements. An article from *Consumer Reports on Health* states that 21 different studies revealed the benefits of reduced aggression, restlessness, irritability, wandering, and repetitive speech; some of the research even concluded that music could provide a temporary improvement in a patient's memory (Consumers, 2006). A study conducted at the University of Miami School of Medicine showed that Alzheimer's patients exposed to music had increased levels of melatonin: a hormone that contributes to a calm, relaxed mood (Tufts, 2001).

With regard to aiding people with cancer, music has improved patients both physically and emotionally. Dr. William Swartz, M.D. conducted a study on cancer patients in Pittsburgh and observed positive effects on one patient in particular. Physically, music helped the patient because the music kept her relaxed before, during, and after her surgery. She required significantly less anesthesia than expected and did not need any of the usual medications after her operation. Emotionally, music helped calm her and aided her in dealing with her changing emotions throughout her chemotherapy (Mazo, 2002).

### **Illness in children.**

Children also benefit from music therapy. Children can experience these benefits as early as birth. Doctors utilize music therapy with premature babies. These babies often have many life-threatening complications, so doctors will take advantage of any possible aid. Researchers in

Louisiana found that premature babies who were exposed to lullabies went home earlier than babies who were not (Gideonse and Westley, 1998). In addition to helping newborns, music can help older children with learning disabilities develop language skills. One music therapist helped a four-year-old boy from New York improve his communication abilities through exercises in piano and drums (Gideonse and Westley). As children develop into young adults, many will face emotional stress. A number of teenagers are diagnosed with depression. Many teenage girls claim that music helps them cope with their emotions and consequently prevents their suicidal actions (Campbell, Connell, and Beegle, 2007).

### **Stress and anxiety relief.**

Doctors, scientists, and researchers agree that the main benefit of music therapy is the relaxation it provides. Music triggers the release of endorphins, the body's natural painkillers (Mazo, 2002). Soothing, mellow music has been shown to slow breathing, reduce stress, lower blood pressure, and decrease heart rate. Listening to any sort of music may also lower blood pressure and ease anxiety. This is because music helps redirect or even halt stress hormones (Mazo). Low pitches played on string instruments at a tempo of approximately 60 beats per minute have demonstrated the most success in relieving stress and anxiety (President, 2003). Classical or meditative music with slow rhythms has also been one of the most effective types of music (Consumers, 2006). The slow styles of music are hypnotic and allow the mind to become distracted from the stress and anxiety. In current society, stress levels are high and continue to increase. Music is one of the methods that can be used to deal with this tension. People of all ages can benefit from music's ability to reduce intense stress and anxiety.

### **Academics and Intelligence in Connection with Music**

Music provides health benefits through listening and participation in musical exercises; however, direct participation in the study of music primarily benefits academic success. There is a strong relationship between the study of music and academic success. This success has been attributed to a neurological connection: Studying music has been proven to build and strengthen connections among nerve cells in the cerebral cortex (Gideonse and Westley, 1998). Musicians have also been shown to have more focused, efficient brain activity according to functional magnetic resonance imaging (Music, 2007). Research has demonstrated a clear neurological link between the two areas.

### **High School Success**

Researchers have provided evidence that music students receive higher grades in high school than non-music students. Also, on average, music students receive more academic honors than the general student population (Wilcox, 2000). These results may be because the discipline of music study, particularly working in ensembles, helps students operate effectively within the school environment (Music, 2007). Research has also concluded that students achieve more success the earlier they begin their music studies. This pattern applies to students of all social classes. Poverty is often associated with poor performance in school, but even students who are considered 'poor' demonstrate success from piano instruction at an early age (Wilcox).

Not only do many music students succeed academically, but students who attend schools with music programs also have higher attendance and graduation rates. The average attendance rate for schools with music programs is 93.3 percent, whereas the average attendance rate for schools without music programs is only 84.9 percent (Music, 2007). Graduation rates illustrate a similar trend. The average graduation rate of schools that consider their music program to be

‘very good’ or ‘excellent’ is 90.9 percent, and the average graduation rate of schools with any level of music program is 90.2 percent (Music). The percentage of graduating students drops dramatically for schools without any music program: There is only a 72.9 percent graduation rate for these schools (Music). Schools with strong music programs have higher attendance and graduation rates which correlates with more successful students.

### **Languages and Reasoning**

Much of this academic success can be attributed to the significant connections among music, languages, and reasoning. Music training has been found to help develop the left side of the human brain, the side that manages languages and reasoning. Students who have musical training have a stronger verbal memory than those students without any training; theoretically, the longer the student has had musical experience, the stronger his or her verbal memory will be. Larry Scripp, Harvard Project Zero researcher, also recognized the correlation between music and language. He found that rhythm corresponded particularly with a person’s reading ability. He also discovered that an understanding of pitches associated specifically with a person’s mathematical ability (Music, 2007). Not only does the understanding of pitches help to improve mathematical skills, but the hands-on experience of music can also help enhance a student’s problem solving capability.

### **Examination Scores**

Music students’ abilities in languages and reasoning are reflected in the results of various standardized tests. Music students tend to score higher than non-music students on examinations such as the SAT, intelligence quotient (IQ) tests, and local standardized tests. Students involved in music classes scored an average of 62 points higher on the verbal section of the SAT and 41 points higher on the math section than students with no music course in their schedule (Music,

2007). The IQ test illustrated this same tendency. One study gave a preliminary IQ test to 144 students. A portion of the group was then given keyboard lessons. Others were given lessons in voice, lessons in drama, or no lessons at all. The children were given the test again, and the keyboard and voice students increased their scores by more than the students who were taking drama or no lessons (Music). This pattern pertains to other standardized tests as well. Research has shown that the students with the highest scores in English and math are the students attending schools with outstanding music programs. Students enrolled in schools with mediocre programs do not perform at the highest level, but they have better results than schools with no music program at all (Music).

### **Life Skills Associated with Involvement**

People involved in music study or performing groups develop many qualities and skills needed to succeed in everyday life. People involved in music performance learn to take risks and conquer their fears (Children's, 2006). For example, if musicians take risks by performing in solo performances, then they may conquer their fear of stage fright. Taking risks allows musicians, especially young musicians, to live up to their potential and to deal with their anxiety (Children's). These performances also teach musicians to think quickly and to be flexible (Music, 2007). Children and young adults gain these skills at an early age and are able to benefit most from their experiences. Studying music and performing can also help young people develop creative abilities that lead to new ideas, new experiences, new challenges, and personal satisfaction (Music). Students develop the necessary social skills and work ethic required in life beyond school.

### **Social Skills**

People involved in performing groups are forced to interact and work as a team in order to succeed. These performing ensembles allow many people to interact; musicians meet different people and develop many new friendships. The Apple Hill Center for Chamber Music is an organization that encourages people from all over the world to meet and perform together in the rural community of Nelson, New Hampshire. The staff at Apple Hill observes how extremely different people quickly become friends (Kim, 2008). Children who study music in-depth have proven to be more sensitive to others and are usually better listeners (Wilcox, 2000).

**cooperation.**

Involvement in a performing group shows musicians the necessity of cooperation in order to achieve success. Ensembles require each member to work together towards the common goal: the performance (Children's, 2006). Each member of the group must make compromises in order to commit to a successful ensemble. If one person is missing, disruptive, or not focused, his or her behavior affects the entire group; cooperation is necessary. In situations where there is no director, musicians must be even more cooperative. They must connect effectively, whether it is verbally or nonverbally, to achieve the common goal. People, especially children, exposed to this group setting learn communication skills, patience, and teamwork (Children's).

**accepting other cultures.**

People learn to accept other cultures through music by appreciating the different musical styles of other cultures and by meeting new people in ensemble situations. Michael Pitt, a music department chairman at a middle school in New York, believes that teaching music from other cultures helps children accept people of other races because they see the value of other cultures' art (Gill, Rogers, and Rogers, 2000). The Apple Hill Center for Chamber Music is based on this idea of using music to accept other cultures. The institution's philosophy, Playing for Peace, has

a goal of using music “to bring together people of diverse backgrounds to bridge differences and enhance global awareness” (Apple, 2008, p. 1). There are numerous countries besides the United States that are involved in Apple Hill’s Playing for Peace summer workshops: Azerbaijan, Russia, Turkey, Vietnam, Israel, and several others (Apple). Apple Hill works to unite people from these conflicted nations and to teach the community about the value of other cultures (Apple). By being exposed to other cultures, people to begin to understand how other societies operate and to learn their beliefs. It is crucial for people of all ages to appreciate and accept other cultures: The world is currently facing problems that require cooperation from every nation.

### **Work Ethic**

Involvement in music develops a person’s work ethic because of the commitment required to achieve success. Each member of a performing group must commit to learning the music by practicing and attending the rehearsals and performances. In order for a group to work effectively, practice must occur regularly and efficiently. This necessity trains people to work diligently. The developed work ethic is associated with a drive for excellence. Musicians learn the difference between excellent and mediocre work by observing the details of how performances are put together and the effort involved (Children’s, 2006). Michael Pitt, music department chair of a middle school in New York, says that music students know how to strive for perfection (Gill, Rogers, and Rogers, 2000). The work ethic developed through music study is transferred to study skills in school, hard work in the professional world, and general desire for excellence (Music, 2007).

### **Need for Music Education**

Music is beneficial to people of all ages from all over the world in the areas of health, academics, and personal character; music is more than a leisurely activity and source of

entertainment. Those who view music as merely a hobby or form of entertainment probably do not consider music as an essential part of a child's education. However, the No Child Left Behind Act of 2002 recognizes this connection. The Act declares the arts, including music, as part of the defined core academic subjects (Music, 2007). The Act recognizes the possible benefits in academics and personal character.

A proper music education can improve students' high school grades, test scores, and abilities in language and reasoning. Music education provides students with critical analysis skills, the ability to deal with ambiguity and to solve problems, perseverance, and a drive for excellence (Music, 2007). A music education also instills the crucial social skills and work ethic students need in life beyond the classroom and in the work environment. Fred Behning, an International Business Machines (IBM) consultant and orchestra member, says that what he has learned in standard high school classes has become obsolete; what is still valuable to him are the lessons concerning learning as he goes, adapting, taking risks, and having confidence, all of which he learned through band and drama (Music).

Music gives students the opportunity to discover the connection among standard academic subjects by combining the expression of language, the reasoning of mathematics, the cultures of social studies, and the motivation required for all academic areas. Although specific facts and details from certain classes may be forgotten or become unnecessary, people remember the general concept of each area of study. These concepts may also prove useless until the relationship among them is realized. Music courses complete students' educations by relating different subjects and instilling the qualities and skills needed to succeed in today's society, lessons that cannot be learned exclusively in the traditional core subjects.



Apple Hill Center for Chamber Music. (2008). *Playing for Peace: Description and history*.

Retrieved from <http://www.applehill.org>

Bock, D., Velleman, P., & De Veaux, R. (2007). *Stats: Modeling the world*. Boston: Pearson Education, Inc. (pp. 293).

Campbell, P., Connell, C., & Beegle, A. (2007). Adolescents' expressed meanings of music in and out of school. *Journal of Research in Music Education*, 55 (3), pp. 220 – 236.

<http://search/epnet.com>

Children's Music Workshop. (2006). *Twelve benefits of music education*. Retrieved from

<http://www.childrensmusicworkshop.com>

Consumers Union of United States, Inc. (2006, October). Calming music to heal your mind and body. *Consumer Reports on Health*, 18 (10), pp. 10. <http://search.epnet.com>

Estrella, E. (2008). *Benefits of music education: 5 reasons to play a musical instrument*.

Retrieved from <http://musiced.about.com>

Gideonse, T., & Westley, M. (1998, September 21). Music is good medicine. *Newsweek*, 132 (12), pp. 103. <http://search/epnet.com>

Gill, A., Rogers, E., & Rogers, O. (2000, June 1). Students see the benefits of music education: Wagner's orchestra pitt. *New York Amsterdam News*, 91, 20. <http://search/epnet.com>

Kim, S. (2008). *About us: Artistic philosophy*. Retrieved from <http://www.applehill.org>

Mazo, E. & Parker, M. (2002, June). The medicine of music. *Health*, 16 (5), pp. 74.

<http://search/epnet.com>

Music Educators National Conference (MENC). (2007). *Why music education? 2007*. Retrieved from <https://www.menc.org>

President and Fellows of Harvard College. (2003, March). Music as medicine. *Harvard Men's*

*Health Watch*, 7, 5. <http://search/epnet.com>

Tufts University. (2001, February). Music therapy: One key for people with Alzheimer's or

Parkinson's disease. *Tufts University Health & Nutrition Letter*, 18, 3.

<http://search/epnet.com>

Wilcox, E. (2000, February). Music, brain research, and better behavior. *Education Digest*, 65

(6), pp. 10. <http://search/epnet.com>