

# Study **Stress** and Music

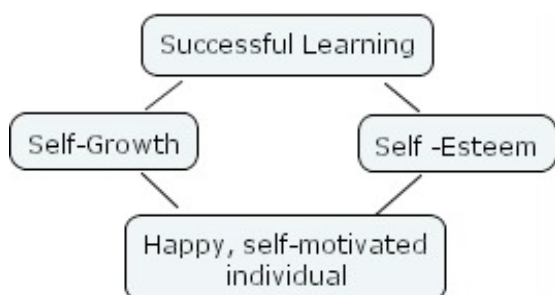


What is the impact of background music on learning? Given that about 75% of students listen to music with homework, we ought to know.

Take a journey into the psychology of music listening on human behaviour.

Everyone enjoys learning. We are born curious, eager to make sense of the world we live in and to gain an understanding of our self. New and successful learning results in self-growth and feeds our self-esteem.

*Human beings seek self-esteem and happiness more than anything else - Aristotle*



But successful learning can be disrupted by stress and negative emotions. Emotions are 24 times stronger than thoughts and how we deal with them

impacts on our learning, and many other important facets of our life.

*...the little emotions are the captains of our lives and we obey them without realizing it.*

*- Vincent Van Gogh, 1889*

**Stress** occurs when there is a *perception* that a given challenge is greater than our skills. Stress can be good or bad, depending on how we deal with it. Good stress causes a narrowing of attention, bad stress causes a focus on negative outcomes. Bad stress can interfere with brain circuitry making learning more difficult. Physiological changes resulting from stress include increases in pulse rate, blood pressure and body temperature. Severe stress can cause headaches, tears and ulcers. Stress interferes with learning. Most students are confronted with stress in their student lives.

**Music** is an art form which deals with the representation of emotion through the medium of sound. It can have a physical effect on us because it is closely linked with emotion. The major reason we listen to music is to moderate our emotional state. In a very real sense music connects us with the inner world of our emotional self.

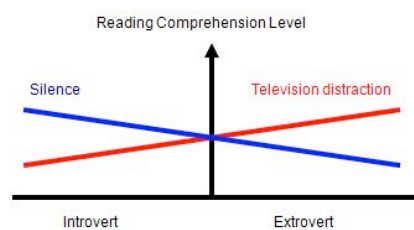
Many studies testify to the power of music to affect our mood state and reduce stress levels. Medical research has found that music can induce a desired physiology of a lower heart rate, blood pressure and body temperature. Music is also used in marketing, sports psychology and social behavioral manipulation. In my presentations in schools, I cite a number of interesting experiments that I studied within my masters degree, and demonstrate by playing examples on piano. Fascinating not only for music and psychology seniors, but important knowledge for all students and teachers.

So we come to the *raison d'être* of the presentation:

**Does music help or interfere with studying?**

Firstly, it depends what the task is. The more difficult the cognitive challenge, the more likely background music will disrupt the learning process. Music listening imparts a cognitive load. However for less challenging learning tasks, music can assist in providing external stimulation and a positive learning arousal state.

Secondly, it depends on personality.



Extroverts enjoy and often require more external stimulation than introverts, and are likely to handle background noise better than introverts, as shown in the study above.

Third, it depends on the characteristics of the music being listened to.

**What are the music characteristics that aid or disrupt study?**

**Tempo**

The recommended tempo for background music is in the range 70 -110 beats per minute, slightly faster than the heartbeat at rest. Music at fast tempi exerts a greater cognitive load (demands more attention) because our brain is processing more musical events per second. Fast music also raises the heartbeat, which is why gymnasiums use certain types of music with their fitness programs. Very slow music lowers the heartbeat, creating a state that might be too relaxed for study purposes.

**Volume**

Music which is very loud or forceful exerts a greater cognitive load which makes concentration more difficult. Music which is too soft can also be irritating if we find we are straining to listen.

Music with sudden dynamic (volume level) changes is also unsuitable. Volume levels should be moderately low and consistent.

### **Tonality**

In this context, tonality refers to whether music is in a major or minor key. Music written in a major key has a happy character, and minor, sad. Most people can pick the tonality of music. For example, *Twinkle Twinkle Little Star* is in a major key, whilst a funeral march would be in a minor key. Choosing music written in a major key and at an appropriate tempo is best for study purposes, although many people find that slightly quicker minor-key music also works. This is because of relationships between musical characteristics - particularly between tempo and tonality, creating different arousal thresholds.

### **Lyrics**

Young people mostly listen to song; that is, music with words. Lyrics are the most distracting aspect of background musical listening, because they compete with the same brain regions that process language. More particularly, studies have found that the most distracting background music per se is fast and familiar vocal music known by, chosen and liked by the listener.

So it's not about genre of music, be it classical, jazz, pop or rock, but the inherent musical characteristics which affect our mood and learning readiness. There is still much we don't know about the effects of music listening on behaviour, and fMRI scanning is contributing much to our understanding.

Students should understand that if they play background music during homework, the primary aim remains to engage in a sustained period of learning. If music can help maintain a healthy learning- arousal state then well and good. But it's not about entertainment, and not all music is appropriate. The largest body of music with the appropriate characteristics to study to is music from the baroque and classical periods. Baroque music includes compositions by Bach, Handel, Vivaldi and Pachelbel, and suitable classical music includes selections from Haydn, Mozart and Boccherini. I have compiled a 10-hour mp3 playlist for schools and individuals. Each piece has been examined and selected by me based on the above criteria. Contact me if this is of interest; a fee applies.

In summary, the use of background music for study is a personal thing. What is suitable for one will not necessarily be for another.

© 2011 Michael Griffin M.Ed Studies; B.Ed (Music); A.Mus.A (Pianoforte)

[www.musiceducationworld.com](http://www.musiceducationworld.com) [griffin@musiceducationworld.com](mailto:griffin@musiceducationworld.com)

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Background Music in the Learning Environment:

Borrowing from Other Disciplines.

**Michael Griffin** M.Ed Studies B.Ed A.Mus.A



Michael Griffin has been presenting for schools and conferences in more than 20 countries. His primary focus on achievement and motivation encourages independent thinking, reflection, participation and action.

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