

Study, Stress and Music

By Michael Griffin

How does your child study –in silence or with some form of background sound? The research I've done suggests that about 70 % of students like to study with either television or music in the background.

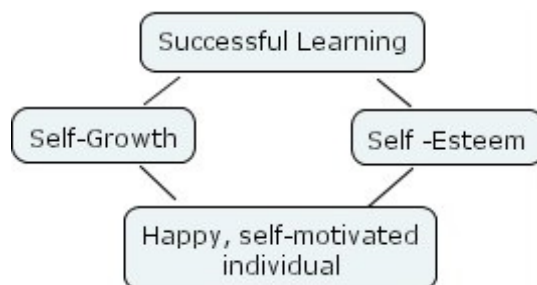
This article looks at whether the use of such background stimulation is beneficial or harmful during study.

Stress is encountered when there is a perception that a 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. Research has shown that bad stress can interfere with brain circuitry making learning more difficult. Physiological changes can result from stress. In particular, pulse rate, blood pressure and body temperature can all rise. Severe stress can cause headaches, tears and ulcers. In summary, stress can negatively affect learning. Does background music enhance or diminish a learning readiness state? Before we come to this, let's look at some basic learning psychology.

It is natural to **enjoy learning**. We are all born curious and eager to gain new knowledge to make sense of the world we live in and gain an increased understanding of our self. Therefore, the results of this learning are **self-growth** and **self-esteem**. This process is enjoyable because we have a new understanding of who we are and our place in the world. These successful learning experiences (and particularly discovery experiences) generate the self-esteem we all crave.

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

-Aristotle



What disrupts this model of the happy, self-motivated individual? You guessed it –mood, emotions and **stress**.

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

-Vincent Van Gogh, 1889

So how does music fit in with all this? 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 so closely linked with emotion, perhaps even so more than the abstract nature of words. Numerous studies leave us in no doubt that music can affect our mood state and stress levels. In fact, a great deal of research at present involves the use of music in hospitals and medical centres to assist recovery rates and induce the physiology (as discussed above) of heart rate, blood pressure and body temperature., and the results are promising.

Back to the bottom line: 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 process. For less challenging learning tasks, music can greatly assist in providing external stimulation. Secondly, it depends on the characteristics of the music which we will come to in a moment; and thirdly, it depends on our personality. Extroverts enjoy more external stimulation than introverts, and are likely to handle background noise better than introverts.

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. Faster music demands more attention and raises the heartbeat whilst slow music may put us to sleep!

Volume

Basically, music which is very loud or forceful exerts a greater load on cognition and demands much attention. 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 level is an individual preference, but should be moderately low and consistent.

Tonality

For this purpose, tonality refers to whether music is in a major or minor key. Music written in a major key generally has a happy feel, and minor- sad. Interestingly, even very young children are adept at picking the tonality of music. For example, *Twinkle Twinkle* is in a major key, *Beethoven Symphony no.5, 1st movement* is in a minor key. Choosing music written in a major key at the tempi recommended above is generally best for study purposes, although many people find moderate tempo minor key music very relaxing.

What about **lyrics**? Lyrics compete with the same brain region that processes language and hence is distracting. In fact, research studies have concluded that **the most distracting background music is fast, familiar vocal music known by, chosen and liked by the listener**. This is bad news for those who insist that having the television on is helpful for their study. Sorry kids –the research simply does not support this position!

So it's not about genre be it classical, jazz, pop, rock, but the musical characteristics which affect our mood and learning readiness. That is; tempo (the speed of the beat), volume, tonality (major or minor) and whether or not the music is instrumental or has words (lyrics).

This poses a dilemma for many of our students who like studying with contemporary lyric-based and often fast and minor-key contemporary music. But we need to remember that the purpose of background study-music is to assist the learning process, not to provide an additional form of entertainment. The largest body of music which is

- of moderate tempo
- volume consistent
- not too emotional
- in a major key
- and most importantly - instrumental - is **classical music and baroque music**.

I said at the beginning that about 70% of students choose to study with either music or the television on in the background. As for me, I am a music teacher and happen to fall in the 30% category preferring a silent study atmosphere. But those who like studying to music have found some of the following benefits:

- *It shuts out distractions*
- *I get immersed in my own world and become more productive*
- *It puts me in a positive frame of mind and a better mood*
- *It gives me a general feeling of well being*
- *It calms me before a large task and I stay focused for longer*
- *It makes time go by fast*
- *It helps me work quicker*
- *It's good for repetitive homework tasks*
- *It helps my creativity*
- *It makes studying more **enjoyable***

In summary, the use of background music for study is a personal thing. What works for someone else may not work for you. It depends on the task: to stimulate or relax? It's not about entertainment, but regulating the emotional state in preparation for learning.

I run workshops on the benefits and distractions of background music aimed at senior students, teachers and parents. 50 minutes is all you need. Email me to find out when I am next in your part of the world.

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