

The Brain and Music

by Larry Swingen

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Because of all the recent research on the human brain and how music and the brain relate, let us ponder what actually happens in our brain when we perform, listen to, or compose music.

Howard Gardner states that music is one of eight intelligences or capabilities of our brain. We have an innate musical ability. It is remarkable to consider all the areas of the brain that are activated during musical pursuits. Music is involved in various levels of our brain from the early reptilian brain to the more recently developed frontal lobe. Different parts of music are tied to many different areas in the brain. For example, when we are sight-singing, our brain is more active than it is for most other activities. The amount of information available is staggering.

The larger picture involves how we take in this information and apply it to our day-to-day teaching and our own learning. In the book “The Owner’s Manual for The Brain” by Pierce Howard, music is historically used for entertainment and communication. Dr. Howard claims there are three newly evolved roles for music that include medicinal, facilitative, and mood altering.

Howard cites studies in which epileptic patients show a decrease in spiking after listening to Mozart. He cites studies

that show Alzheimer’s patients improve paper folding tasks after listening to Mozart.

He believes that music does not have a specific location in the brain but is a by-product of other evolved areas. Play a variety of music as your students enter your room, while they are working on a theory assignment, or while they are stretching during warm-ups. Experiment with them. Play Mozart.

As musicians, we know about other important roles music plays for us and our students. Singing in a choir allows us the opportunity to create beauty, to connect our heart and brain to express emotions through interesting and complex music. These are very valuable reasons to be involved in music.

As we prepare for concerts and music festivals, we can get lost in the pitches and rhythms of the music. Continue your efforts to get to the heart and soul of the music with your students. Ask them what they think the music is about or how it makes them feel. Ask them what personal experiences they have had that relate to the music they are rehearsing.

For teachers with young children or grandchildren, Howard suggests encouraging young children to sing by themselves, sing with you, and sing with others. This is no surprise. We’ve been preaching and doing this for a long time.

If your child shows an interest in piano or violin, get him/her going on those instruments around age three. The optimum window for learning an instrument is from age three to ten. Children have the best chance of developing perfect pitch with early exposure to music.

Know that repetition is crucial in establishing musical building blocks. Children love repetition. Use repetition with your high school students. Let them know it is good for them.

Many of your musically inclined high school students have been exposed to music from an early age and have been learning piano. It is fun to see what they can do and how much that background has changed them for the better. They are our best all-around musicians. They are good sight-readers and have good intonation, rhythmic sense, etc.

With regard to the “Mozart effect,” spatial and abstract intelligence is boosted along with IQs. Even rats improve their maze completion times after listening to Mozart for certain periods of time. This effect is more temporary for older brains. Young brains are able, because of a more plastic neural circuitry and changeability, to show significant longer-lasting effects.

Have your students listen to Mozart as a brain organizer. Interestingly, Fran Rauscher and her colleagues at the University of Wisconsin—Oshkosh reason that Mozart is most often used as “the” music source because his music exhibits three unique characteristics:

- Everyone seems to like his music.
- He began composing at an early age.
- He doesn’t seem to have composed a single “bad” piece of music.

So, Mozart’s brain was, likely, perfectly suited to music composition. In my opinion, he is the most successful composer of satisfying music.

My high school choir meets during first period. I love the fact that the students start their day with music. I firmly believe that they are better off for the rest of their day because of that musical start during the first period. Sometimes I even play a bit of Mozart for them on the piano.

Eric Jensen, in his book, *Brain-based Learning: the New Paradigm of Teaching*, lists three models for teaching. In his model labeled “Survival of the Fittest,” teachers can “lead a horse to water, but can’t make it drink.” This teaching method places responsibility on the student to learn from a standard

program. There is less accountability resting on the teacher.

The second model Jensen titles “Determined Behaviorist.” Here the molding of students is achieved by use of rewards and punishment. Students are manipulated with little student input or choice.

The third model is termed “Brain-based Naturalist.” In this model, the goal is to see what can be done to “make the horse thirsty” so that it will want to drink. The teacher values each student and works with the students’ motivators so that learning occurs more as a natural consequence.

I can think back through the teachers I’ve had in the past and am able to fit them into the teaching styles noted above. As we teach year after year, we continually improve our methods and motivations. I would say that we rework our teaching style, gravitating toward the “Brain-based Naturalist” model because we see that it works best. Our subject is human-based. This fits right in with this teaching style.

Jensen states that people who teach and train others make a vital contribution to the preservation of humanity. We must become a world of learners and begin to value learning as much as freedom, liberty, justice, shelter, and good health. We are obliged to take this assignment seriously. Our collective future, in fact, depends on it. What a calling we have chosen!

As one of the lifelong learners working to instill the desire for lifelong learning in our students, I encourage all in our profession to read recent information readily available about the brain and teaching, the brain and learning, and the brain and music.

Realistically, after music festivals, final concerts, and inventories, set aside time to dive in and see how you can improve your teaching based on what you learn about the brain.

Have a great time this year. Enjoy all the fruits of your labors as you see and hear your students improve and perform. Encourage your singers not only to make lovely sounds but to get to the soul of the music they are rehearsing. Amazingly, we get to witness quite a transformation. Our students becoming expressive human beings! 

Resources Cited

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