

Music and the Brain:
Neuroscience Applications in
Music Education

Midwest Band & Orchestra Clinic

Friday, December 21st, 2012

2pm

Benjamin Helton, Clinician



Clinic Outline/Notes

Part I, Pedagogy and Physiology

1. Overview
 - a. Pedagogy

- b. Advocacy

2. Reptile Brain

- a. Cerebellum and brainstem

3. Midbrain

- a. Muscle Memory

4. Frontal Lobes

This clinic is designed as a primer to neuroscience application in music education. Recent developments in technology (such as fMRI scanners) have caused this area of research to expand greatly. Neuroscientists have long used music as a way to understand the way the brain processes information; particularly in regards to sound processing and attention. We, as music educators, can apply this information to our teaching to enhance our pedagogy and advocacy.

The brain is the most fundamental element to learning. Whenever an action is learned, there is a physical change in the brain. Learning research has been limited to behavioral assessments in the past. Neuroscientists have been able to detect and predict the physical changes in the brain in terms of learned behaviors using fMRI scanners and EEGs. Knowing how the brain functions can open new ideas on how to approach our pedagogy and advocacy.

1. Haven't you heard? It's a battle words.
 - a. Create different kinds of minds.
2. Efficient Minds (Neuro-timing)
 - a. Speech in Noise
3. Creative Minds (Plasticity)
 - a. Music Therapy
4. Informed Consumers (Expert Listening)
5. Combined Skills

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Clinician Information

Benjamin Helton has been a student at Northern Illinois University since the summer of 2010. He joined the Huskie Band staff as a Graduate Assistant in the summer of 2012. Prior to attending NIU full time as a graduate student, Ben was a public school teacher for six years working with all age groups from first grade all the way through high school.

He attended the University of Illinois at Urbana-Champaign for his undergrad where he studied music education under Dr. Joseph Manfredo, Dr. Pete Griffin, and Rick Murphy. He also studied tuba under Mark Moore. During his time at the University of Illinois, he performed with the Marching Illini, Symphonic Band I, the Illinois Symphony Orchestra, British Brass Band, Basketball Band, Illini Opera, Tuba/Euphonium ensemble, multiple concert bands, and the Green Street Brass Quintet.

Benjamin was Director of Bands at Bloom District #206 from 2008-2012. While there, he directed the Bloom Wind Ensemble, Bloom Trail Symphonic Band, the BT Marching Band, Jazz Band, two Pit Bands, and Basketball Pep Band.

In addition to his duties for NIU, Benjamin is also an active performer in the Chicagoland area. He is a full tenured member of the Wheaton Municipal Band, subs for the Chicago Brass Band and Lakeside Pride Symphony Orchestra, and plays in both the Wind Symphony and Wind Ensemble at Northern.

In recent years, Benjamin has also become a voice for music advocacy in Illinois. He has presented clinics on neuroscience in music education at the Illinois Music Educator's Conference and for Vandercook College of Music. His writing has also been published in *The Instrumentalist* magazine.

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