The worlds of music and music education are filled with interesting and unusual tidbits of information that underscore the value of our profession and how important it is to continue to champion opportunities for our students to study music. How many of the following 10 fun facts did you know?

1. Most people can identify the genre of a musical excerpt that is as brief as one-eighth of a second. Nearly 350 college students listened to classical, jazz, country, metal, and rap/hip-hop excerpts that were 1 second, ½ second, ¼ second, and ⅛ second long. Overall, listeners correctly identified the genre of 76% of the excerpts; even at the shortest length, they were correct 54% of the time. Level of training, gender, and preference influenced speed and accuracy of identification. Even more impressively, listeners can generate an emotional response to a specific musical excerpt in as little as 50 milliseconds! These are just two indicators of how exquisitely the brain is designed for music.

2. Infants can process musical pitch almost as well as adults. Tested just two to three days after birth, newborns were successful in distinguishing deviant from standard tone pairs. Brain responses to unexpected tone patterns were significantly different from those of standard tone pairs. Similarly, infants can process the direction of pitch change, separate different sound streams (e.g., mother’s voice from the radio), and create different representations of pitch and timbre. We come into the world primed and ready to respond to music.

3. Practicing a musical instrument changes the brain in physical ways that lead to faster and more efficient musical responses. As one practices scales or difficult passages, for example, neurons in the brain wire together to create specific pathways. As the behavior is performed repeatedly—especially in deliberate practice that involves focused attention, appropriate feedback and opportunities to repeat the behavior with corrections—a fatty covering (myelin) is wrapped around axons, making message transmission faster and more efficient. Axons are the long “tail” that extends from the nucleus of a brain cell, carrying information from one neuron to another. One note of caution, however, is that this process occurs whether the behavior is correct or not. Thus, music teachers who have told their students to practice slowly and correctly while learning a passage have strong neuroscientific evidence to support them.

4. Even if a person stops playing a musical instrument, the effects of building this skill persist into adulthood. Researchers found that those who learned a musical instrument as a child, but did not continue as adults, had stronger brain responses to sound than those who never learned to play. Thus, music education in childhood, even if discontinued, has positive implications for the adult brain.

5. Being exposed to loud sounds, including music, can permanently damage your hearing. According to the latest standards, being exposed to anything louder than 85 decibels (dBA), approximately the loudness of a garbage disposal or passing diesel truck, for eight hours may cause a problem. Each rise of 3 decibels cuts the amount of optimal exposure time in half (e.g., 88 dBA for 4 hours). Musicians should get in the habit of wearing hearing protection in particularly loud settings.

6. Humpback whales “compose” songs. Male humpbacks vocalize as they migrate to and from breeding grounds. These “songs” reflect geographic location and identify specific pods.
Further, all the males in a pod learn the same song, indicating some form of cultural transmission. All living creatures make sounds, and while it may not be music per se, animal and nature sounds have profoundly influenced human music.

7. Some singers have learned how to produce two melodic lines simultaneously. Tuvan throat singers, seminomadic herd- ers from southern Siberia, can produce a low-pitched drone that is sustained while a higher-pitched melody is sung above it. Often, the melody is a fanciful representation of local environmental sounds, such as a waterfall, birds, or other animal and nature sounds. Human ingenuity and creativity in organizing musical sounds is limitless and often pushes the boundaries of what is possible.

8. Participation in music can enhance self-esteem and attitudes of at-risk students. Adolescent girls who were at risk of academic failure participated in a music-only or a music-mentorship program in which they mentored students with developmental disabilities. Self-esteem scores increased in both groups, and those in the mentoring group also became more interested in teaching as a career.

9. Music education experiences are a prime way for all students to be included. As a vehicle for social justice, music education can and should involve matters of language, age, gender, sexual orientation, social class, ethnicity, race, color, physical characteristics such as size, weight, height, and dexterity, personality characteristics such as introversion, independence, sensitivity, and anxiety, intelligence, wealth, geographic location, culture and country of origin, and family background including religious and political affiliation and orientation to education. Music educators have the special privilege of offering a safe haven of beauty and acceptance to everyone with whom they come in contact.

10. What you do every day as a music educator matters—a lot.

- It matters to newborns and toddlers. Six-month-old infants who participated in six months of music classes emphasizing active musical engagement exhibited more positive social development and stronger brain responses to music than those who only listened to music passively.

- It matters to children. Following one year of musical training, beginning at age four and a half, children developed stronger brain responses associated with higher cognitive functioning than those who did not take music lessons.

- It matters to teenagers. Adolescents described their music teachers as important role models who encouraged and motivated them to succeed.

- It matters to senior citizens. Older adults who participated in a music ensemble experienced a clear sense of accomplishment and fulfillment.

- It matters to the school as a whole. Students in schools with high quality music programs outperformed students in schools with inferior music programs on standardized tests of English and mathematics.

Two additional sources clearly demonstrate that what you offer your students makes a difference to an individual’s overall quality of life.

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66 Southwestern Musician | February 2018
• Alf Gabrielsson interviewed more than 1,300 individuals and asked them to describe the most powerful musical experience they had ever had. In a book of nearly 500 pages, he recounted personalized stories that detailed the amazing and powerful role that music has played in people’s lives. Here are just two, selected quotes from the dozens he cited: “Just as food is necessary for your body, music is necessary for your soul.” “Music, for me, has been an enlarged part of reality, an extension. Through music, I can find myself, my identity, my strength, my soul. It always strengthens me, makes me feel fulfilled, bigger than myself. Gives me calm, peace, harmony, and balance.”

• Adam Croom detailed the strong role that music plays in human flourishing. Based on a thorough review of psychological and neuroscientific research, Croom confidently claimed that being actively involved with music contributes significantly to a high-quality, fulfilling life. He found evidence to support the notion that music can positively influence one’s emotional life, one’s interpersonal relationships, one’s sense of flow in engaging activities, one’s level of accomplishment, and one’s experience of meaning or purpose in life.

Surely you already know that what you do as a music educator makes a difference. I hope this direct and compelling evidence gives you even more reasons to celebrate yourself from time to time and to continue doing the hard and important work that you do!

Donald A. Hodges is Professor Emeritus at the University of North Carolina at Greensboro, having recently retired after 43 years of university teaching. Hodges is a 2018 College Division Featured Clinician.

References
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