Music to Boost Student Learning

Have you ever noticed how your foot gets a bit "heavy" when your favorite tune plays in your car? It can be an expensive learning experience – trust me! ☺ The human body responds to music in fascinating ways. Not only does your heart rate and respiratory rate synchronize with the beat of the music, so does your movement (Koelsch & Jäncke, 2015). The faster the tempo, the faster you move (Levitin, Grahn, & London, 2018; Leman et al., 2013).

Music is a powerful mood-altering medium. Want to stay pumped up for your workout? Chill out after a stressful day at school? Or find the courage to take that first step toward a dream? Music can help in all of these situations.

But, what about the challenges you face in your classroom? Music can help with many of those, too. Do you have students who walk into class practically sleep-walking? Have students struggling with anxiety, depression, or trauma at home? Do you work with students who struggle to stay focused on a task? Do you try to keep students active during class, but they move at a pace that even a snail would balk at? Keep reading to discover how music can be a powerful tool to remedy all of these situations.

When to use music?
Generally speaking there are four main circumstances when music can give an added boost to your teaching efforts.

1. **Facilitate a state**
   If your students current state is not "learning-approved" – meaning it is not the best state for the current task, let music do some of the heavy lifting for you to help alter a student's state. If students are a bit too sluggish, put on a dance tune and get them moving. On the other hand, if they could benefit by being in a more mellow state, your playlist is there to help. Having a wide variety of songs that can influence student states will empower you to make a quick adjustment with students when needed. Check out the extensive lists below for TONS of student-approved songs.

2. **Cue students to perform a task**
   Tired of giving students the same set of directions day after day after day? Whether it is to clean up, line up, or pass the homework up, you are likely fed up with repeating these directions over and over again. And your students are probably tired of hearing them as well. Instead of repeating these directions hundreds of times each year, use music to facilitate these specific behaviors with an "anchor song."

   An anchor song is a specific song that is "anchored" to a specific task. Teach your students that every time they hear the theme song from the LEGO movie, Everything is Awesome, for example, it is time to move into their teams for a group activity. Work with them to learn the cues, and practice with them. Consider the task and choose a song that best matches. A quick clean up needs a different song than "get ready for our yoga and mindfulness minute".

3. **Reinforce a life skill**
   Have you ever had a song stuck in your head for days, despite any efforts to "forget about it?" The lyrics of songs can be catchy and those words can stick around in your brain long after the song has ended. Use this to your advantage by playing songs that reinforce the messages and life skills you are teaching your students. See below for a list of 10 of my favorites in this category.

4. **Increase focus and learning**
   It's possible you've heard rumors about a so-called "Mozart Effect" correlating listening to background music with improved learning (Rauscher, Shaw, & Ky, 1993). There has been a fair amount of controversy around the topic. Let me briefly bring you up to speed.

The researchers claimed that it had a cognitive impact. The problem is that the study has never been successfully replicated (the gold standard in science). Critics claimed that the study was only showing the effects of state-dependent influence (and they turned out to be right).

Years later, most researchers agree that listening to music influences your state, or mood. Students in a positive state, in short, learn better. Therefore, listening to music that positively influences your emotional, physical, and mental state has been shown to improve learning (Lehmann & Seufert, 2017).

There are ways, however, to use music to improve cognition. It requires moving beyond merely listening to music and engaging in music training. ***Learning to play*** a musical instrument DOES enhance general intelligence (not just auditory skills) via cognitive functions, such as spatial (Sluming et al., 2007), mathematical and memory (Hansen, Wallentin & Vuust, 2013), executive functions (Saarikivi K., Putkinen V., Tervaniemi M., Huotilainen), and non-verbal (Forgeard et al., 2008) abilities.

Three Factors to Consider When Choosing Music

Believe it or not, there are many ways to mess up this whole music thing in the classroom. Yes, the wrong kind of music at the wrong time can make things a whole lot worse for students trying to learn. The good news is the following THREE factors will steer you in the right direction. They are: the impact of **lyrics, tempo,** and **familiarity** on the brain and body.

Lyrics: When is it appropriate to use music with lyrics or not is all a matter of context. The evidence shows that music with lyrics disturbs learners more than non-lyrical music (Perham & Currie, 2015). Lyrical music is best reserved for activities that do not involve memory formation (cleaning up; finding a partner; passing in papers; greeting at the door; celebrating mastery of a concept; moving into group seating arrangement, etc.). When students are engaged in an activity that requires more executive function (writing, reading, worked problems, group discussions, assessments, etc.) non-lyrical music is best at a low volume. The lyrics of music, even in the background, can interfere with processing and contribute to cognitive load, or an overloaded working memory (Lehmann & Seufert, 2017).

Tempo: With regard to tempo, remember what you learned above about how your body synchronizes with the beat of a song. When you want students to move quickly into groups, outside for a brief energizer, do a quick-write on a topic, or clean up in record time, play songs with a fast tempo – their bodies will match that tempo. In contrast, a slower tempo will reduce the heart rate and speed of movement. That might be a good match when having a "mindfulness minute", silent reading time, or independent work time.

Pay attention to the beats per minute (BPM). Songs in the 35-50 BPM range will be more calming, while those in the 55-70 BPM range will be more moderate for seatwork. For activities, you might consider 70-100 BPM, and for energizers maybe 100-160 BPM will get students ready to rock.

Familiarity: People feel connected to each other, even strangers, when they find commonality with a song they all know. You'll see this often at concerts as people sing along with the artist, or during the 7th inning stretch at a baseball game. Recent evidence suggests that this familiarity can also enhance cognition (Mogan, Fischer, & Bulbulia, 2017). In addition, people move faster when listening to songs they are familiar with rather than unfamiliar (Leow, Rinchon, & Grahn, 2015; Leow, Parrott, & Grahn, 2014).

Getting The Right Equipment

You'll need a couple hours to get everything all set up and ready to rock 'n roll. You might consider asking for help from a music enthusiast in one of your classes. Choosing your platform to store your music is a personal choice. Some prefer the format of iTunes, while others prefer Spotify, or other music sharing apps like Google Play or Amazon Music. I've used many of them and they are all a thousand times better than the 5-disk CD changer I started with in my classroom in the 1990s. It's just a matter of preference and familiarity with the platform.

Some teachers like to play music from their computer, connected to a speaker. Others play from an app on their phone that is connected via Bluetooth to a speaker. Great quality, Bluetooth speakers (I prefer Bose or JBL) are available for less than $150. You can also use Alexa or your Echo Dot to play music. Here are a few of my recommendations for speakers within various price ranges, with links to Amazon for more details.

UNDER $50
[OontZ Angle 3 (3rd Gen)]

OontZ Angle 3 (3rd Gen) - Bluetooth Portable Speaker, Louder Volume,...
38,898
$25.99
prime FREE One-Day

Pros	Cons
Price – it doesn't get much better than that! 100 ft Bluetooth range – sufficient for any classroom 14 hour play time – no need to recharge at lunch	At this price, it might not survive through your retirement. It's a great speaker if you're on a tight budget now. If you can splurge a bit, the others will likely last much longer.

UNDER $100
[JBL Flip 4]

JBL Flip 4 Waterproof Portable Bluetooth Speaker - Black
7,313
25 offers from $69.90

Pros	Cons
Can wirelessly connect up to 2 smartphones or tablets if you want to have multiple DJs in your classroom 12 hours of play time	There is a Flip 5, which means this isn't the greatest model JBL has to offer, but it is still a great speaker for this price range.

UNDER $150
[Bose SoundLink Color Bluetooth Speaker II]

Bose SoundLink Color Bluetooth Speaker II - Soft black
3,893
$129.00
prime FREE One-Day

Pros	Cons
It's BOSE – they've earned their reputation of the highest quality audio equipment Colors – If you're looking for something other than black, this speaker comes in a variety of colors You'll likely have it for years and years without problems	If there were a con, it might be the 8 hour (cordless) play time. Even still, it should last your entire school day without needing to be plugged in.

To keep your speakers from "sneaking" out of your classroom, keep it locked up in a file cabinet or desk drawer. If that feels likes too much of a hassle, consider hanging your Bluetooth speaker from the ceiling. With such a long battery life, you won't need to touch it all day. Having it up high might detract any sneaky hands from wanting to grab it. You might also consider a security cable lock system like [this one](#) to keep your portable speaker secure.

Creating Playlists

You'll want to create playlists to organize your song selections. You'll see my suggestions below. You can name them whatever you want – just remember the three main filters of **tempo,** whether it is a **lyrical** song, and **familiarity**.

There is even technology now on many smart phones to create a "shortcut" and automate when music is played. This means you can set up your welcome music to automatically start at the times you decide to align with your class schedule. Want your "start song" to automatically play as passing period starts? There's an app for that! Check out the Shortcuts app on your iPhone for more details on how to automate your music playlists. You can also now set an "alarm" on Alexa to play a specific song at a specific time. It just keeps getting easier to use music in the classroom.

Remember to consider the age of your student population. Some of these songs are more suited for teens while others will be loved by the younger crowds.

Welcome
When students are entering the classroom - to create a positive state for learning

Transitions
When students are transitioning between stations, moving into groups, gathering/returning supplies, etc.

Energize/Dance
When students need more energy – aim for 130bpm or higher

Celebrations
When students have accomplished a task or goal worth celebrating

Mellow/Calm
When students need a calmer state

Focused Work Time
When students are doing independent or small group work – reading, writing, discussing, creating. (Pay careful attention to the tempo and choose songs that are appropriate for the task. A fast-writing exercise would use a different song than a reflective journaling activity.)

Self-Regulation
When you want to teach/reinforce a life skill

A few more helpful tips:

1. ***Teach students the impact music can have on their learning***
   Get student buy-in by sharing how the body responds to tempo and how the brain can get overworked in some circumstances by lyrics.

2. ***Student DJ***
   Once students are informed they can act as your DJ and be responsible for playing appropriate music on your signal. This is a great way to empower students to contribute to the class, and reduce your workload by one more thing.

3. **Create a music request list**
   Let students have a say in what kinds of music gets played in the classroom. Set up a piece of paper near your DJ Station for students to write down the song title and artist. Remind them of the purpose and the need for clean/positive lyrics. You might even want to request students email you the lyrics to the song for approval. Another option that could save you time is to create a filtering check list at the top of your music request list. If their song passes the "test", it can go on the list. Things that would go on my check list are:
   - Does the song have any foul language?
   - Does the song promote violence, substance use, hatred toward specific groups of people?
   - Do the lyrics include any sexual content?
   If the answer to any of these is YES, the song is not appropriate for our classroom.

> **WHAT NOW?** Music is just ONE way to boost students' state, improve classroom efficiency, and ultimately enhance learning. There are MANY other evidence-based tools to reach these goals that ALL teachers need to know. If you are struggling to boost your secondary math teacher's motivation skills, give them the support *THEY NEED*. High engagement, high energy with evidence-based tools with secondary math teachers is my professional development expertise. I'd love to help. Contact me at:
> < Liesl.mcconchie@gmail.com>

Citations:

Forgeard M., Winner E., Norton A., Schlaug G. (2008). Practicing a musical instrument in childhood is associated with enhanced verbal ability and nonverbal reasoning. *PLoS One* 3:e3566. 10.1371/journal.pone.0003566

Hansen M., Wallentin M., Vuust P. (2013). Working memory and musical competence of musicians and non-musicians. *Psychol. Music* 41 779–793.

Koelsch, S., & Jäncke, L. (2015). Music and the heart. *European heart journal*, *36*(44), 3043-3049.

Lehmann, J. A., & Seufert, T. (2017). The influence of background music on learning in the light of different theoretical perspectives and the role of working memory capacity. *Frontiers in psychology*, *8*, 1902.

Leman, M., Moelants, D., Varewyck, M., Styns, F., van Noorden, L., & Martens, J. P. (2013). Activating and relaxing music entrains the speed of beat synchronized walking. *PloS one*, *8*(7), e67932.

Leow, L. A., Rinchon, C., & Grahn, J. (2015). Familiarity with music increases walking speed in rhythmic auditory cuing. *Annals of the New York Academy of Sciences*, *1337*(1), 53-61.

Leow, L. A., Parrott, T., & Grahn, J. A. (2014). Individual differences in beat perception affect gait responses to low-and high-groove music. *Frontiers in human neuroscience*, *8*, 811.

Levitin, D. J., Grahn, J. A., & London, J. (2018). The psychology of music: Rhythm and movement. *Annual review of psychology*, *69*, 51-75.

Mogan, R., Fischer, R., & Bulbulia, J. A. (2017). To be in synchrony or not? A meta-analysis of synchrony's effects on behavior, perception, cognition and affect. *Journal of Experimental Social Psychology*, *72*, 13-20.

Perham, N., & Currie, H. (2015). Does listening to preferred music improve reading comprehension performance?

Rauscher, F. H., Shaw, G. L., & Ky, C. N. (1993). Music and spatial task performance. *Nature*, *365*(6447), 611-611.

Saarikivi K., Putkinen V., Tervaniemi M., Huotilainen M. (2016). Cognitive flexibility modulates maturation and music-training-related changes in neural sound discrimination. *Eur. J. Neurosci.* 441815–1825.

Sluming, V., Brooks, J., Howard, M., Downes, J. J., & Roberts, N. (2007). Broca's area supports enhanced visuospatial cognition in orchestral musicians. *Journal of Neuroscience*, *27*(14), 3799-3806.