Your Child's Brain During Piano Lessons

By Mariah Gillespie

Source: *Learning Literacy Through Music* by Kelsey Tarbert

Source: *The Music Advantage: How Music Helps Your Child Develop, Learn, and Thrive* by Anita Collins

Quite simply, there are "fireworks going off" in your child's brain during our piano lessons. **Playing music has more positive impact on the brain than any other human activity. Musicians use *different* parts of their brains, *more* of their brains and *more parts* of their brains simultaneously to complete tasks.**

The overall benefits of music education are indisputable, undeniable, scientifically proven, and well established. But what, exactly, do we DO during our piano lesson that is so good for child development? Here are just some of the areas that we cover, through playing songs, productive practicing, listening to music, drills (see Games, Explained), scales, orchestra exploration, and more.

Keyboard Geography: identifying notes on the keyboard, and associating each note with a letter name (A, B, C, D, E, F, G or do, re, mi, fa, sol, la, ti, do)

WHY IT'S IMPORTANT:

- Reinforces/teaches the alphabet/pre-reading skills
- Teaches left and right (hands, and in general) and that going left and right on the keyboard makes lower and higher sounds, respectively
- Finger Numbers: thumb is always #1, and we learn to count from the inside going out (it's important to play the correct note AND with the correct finger)
- Patternization (identifying patterns and then predicting the next sound/action in a sequence is the basis of all learning): black notes, white notes, clusters of 2/3 black notes, chords, cadences, repetition, and sequence within music

Staff Geography: identifying notes on the staff or "floating notes" on the page, and associating each note with a particular key on the keyboard

WHY IT'S IMPORTANT:

- It is vital that the element of symbol-to-sound connection is included from the beginning of the learning process.
- Ensures that the capacity for music reading to support language reading is utilized
- Connecting what they see with what they hear is a pre-literacy workout!
- **The phonological loop** (symbol to sound, how reading music complements language reading):
    - **Eyes** see a symbol on the page (in reading: a letter; in music: a note)
    - **Brain** hears that sound (sound of the letter or sound of the note)
    - **Brain** tells the **body** how to make that sound (hold your tongue a certain way and say the letter, or press a certain key on the piano)
    - **Body** makes the sound (speaks the letter, or plays the note)
    - **Ears** check that the sound is correct
    - Repeat
- Visual focus (when reading lines of music, not just one note): being able to follow a line of notes from left to right, then down to next line (like reading)—this is even more complicated with piano music, where there are MULTIPLE lines to follow simultaneously (sometimes we use Mr. Pointer to help our eyes follow along).

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- "Visual decoding processes are a large part of literacy learning…some of the visual elements that are part of both literacy and music are the knowledge of letters, words, sentences, visual focus, and visual memory…helps students frame their reading and writing skills. They will understand the functions of all the letters and how to put them together to make meaningful words, and in turn, they will group the words to form sentences. For music, notes are the words. Students learn how to read notes, both in duration and pitch level, and they will see how these come together to make measures and phrases of music." (Tarbert).

Rhythm/Keeping a Beat: the repetitive pulse of music, the beat

WHY IT'S (SO VERY!) IMPORTANT:

- Basic counting skills – knowing what to count to (different notes have different counts) and executing those counts to a beat
- **Being able to keep a steady beat is an indicator that learning to read is ready to happen in the brain.**
- A child's brain needs to develop a level of sensitivity and synchronization to timing cues in language in order to learn how to speak, which leads to learning how to read.
- Finding and keeping a beat is *identifying patterns and then predicting the next sound/action in a sequence*, which is the foundation of the first years of schooling as well as **the basis of all learning.**
- Steady beat competency impacts gross and fine motor skills (walking, running, dribbling a ball, riding bike, writing smoothly).
- The ability to keep a steady beat correlates to early math abilities; repeating a steady beat, or repeating a particular rhythm, helps children identify and repeat a pattern. Pattern recognition is a foundational math concept.
- The ability to keep a steady beat is closely connected to early language and literacy skills: in both speech and music, "rhythm provides a temporal map with signposts to the most likely locations of meaningful input." In other words, the brainwaves match the soundwaves (Collins).
- Keeping a beat is a perfect training ground for inhibitory control: the ability to not get distracted by anything outside the task, and pulling ourselves back in when we do.
- Music and reading share overlapping neural networks; training an executive function skill through music—like inhibitory control—can transfer to reading (keeping focus).
- The simple act of clapping requires global coordination, interaction between motor and sensory systems, and a fine temporal ability to control the entire movement in order to be on time.
- Group playing: should your child choose to be in band at school (or in their own band) or orchestra, it is imperative that they are able to keep a beat with the group.

Sightreading: the ability to play music that you've never played before simply by reading it

WHY IT'S IMPORTANT:

- Wouldn't it be cool if your kid said, "I want to play that Journey song with the piano in it!" Internet, sheet music, download, print, *"Don't Stop Believing"* belts out your piano. You're welcome.
- Sightreading is the ability for your child to say, "I want to play _____" and being able to play it (albeit slowly, carefully, and probably with some mistakes) almost right away, for the rest of their life. Music is a life skill, and they will thank you one day for giving them this gift!

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Listening Activities and Orchestration: hearing sounds of the orchestra and associating different sounds with different instruments; identifying those instruments by both sight and by sound (this is why we often recommend a digital keyboard for younger instead of a "real" piano – so that students can experience different sounds, and also so that we can turn the volume up in order for little fingers to produce big sounds)

WHY IT'S IMPORTANT:

- When you listen to music, multiple areas of your brain are lighting up at once as they process the sound, take it apart to understand elements (like melody and rhythm) and then put it all back together into a unified musical experience.
- Exposure to instruments they may want to learn later in band or orchestra
- Imagination and creativity: listening to music (without the distraction of lyrics) inspires thoughts, emotions, contemplation, stories to match what they hear
- Classical music helps develop the genes that secrete dopamine and improves synaptic function.
- Improved listening, concentration, focus skills
- Can have a therapeutic, calming effect

Musicology: literally "the study of music": music history, learning about composers, musical time periods, how the piano works, music theory, musical styles, genres, etc.

WHY IT'S IMPORTANT:

- History is important, and we learn about composers' lives, the time period in which they lived, what was going on in the world when they were making music, and the four periods of music
- History and culture
- Expanded vocabulary, including foreign languages (staccato, legato, etc.)
- Learning the mechanics of how a piano works (hammers, strings, pedals, etc.) may inspire future engineers, and is also important for students to know and consider when they are producing sounds

Eye/Hand Coordination: using your eyes to direct muscles towards a particular task; the vision system coordinates input and sends signals to certain muscles to make certain body parts (hands, fingers) move

WHY IT'S IMPORTANT:

- Piano playing requires asymmetrical motions of both hands and good hand-eye coordination.
- Gross motor skills: hitting/catching a ball, kicking, clapping, picking things up, climbing steps, etc.
- Fine motor skills: Gripping things (ball, pen, scissors), aiming, reading and writing, typing
- A recent study on hand motor control in musicians suggests that piano players' cortical mapping has actually changed in order to increase the speed of fingers
- Playing the piano using both hands at the same time creates stronger neural connections between the left and right paths of your brain.

Scales: a scale is a collection of notes moving in a stepwise sequence such as CDEFG (using all 5 fingers of 1 or both hands) or CDEFGABC (fingers cross over/under). There are major (happy) scales and minor (sad) scales.

WHY IT'S IMPORTANT:

- Finger strength and dexterity, which will be transferred to other activities, such as sports or cooking
- Hand coordination: hands working together to make sure that each is using the correct finger at the

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same time

- Geometry/numeral prefixes: TRIads (3 notes), PENTAscales (5 notes), and OCTaves (8 notes)
- Steady Beat/Rhythm: playing WITH the metronome—not faster, not slower, but right with it
- Technique: weight application, quiet upper arm, and flexible wrist
- Accurate fingering: extremely important when playing the piano
- Ear Training: figuring out by ear which notes make up a scale, listening for half steps and whole steps, major and minor, harmonic and natural minor
- Theory: How many sharps are in this key? How many flats? Where is it on the circle of fifths? What is its relative major or minor? We often play the scales that match the songs we're working on.
- They're *everywhere* in music!

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