

Ian, Part II: Learning Piano With a Severe Memory Disability

A Cognitive Eurhythmics Case Study

by Eric Barnhill

In my last study I recounted work with Ian, a boy with deficiencies in shorter-term memory and attention, using music and movement to stretch memory and attention and seeing palpable results.

After 18 months of work with Ian, I was able to teach him a piano piece. The time this took demonstrates that the traditional paths towards teaching a piano piece were obviously not available in the same way. Over a long period, we found our own way to playing a children's song on the piano, a story weaving together cognition, attention, kinesthesia and of course a natural love for music.

In our previous work, Ian had demonstrated an ability to grasp fluently musical concepts that fell within his window of available attention. He was able to recognize basic rhythmic units such as eighth, quarter, half, and dotted notes, clap them and identify them with rhythm words. He learned the solfège scale (do, re, mi, etc.) and could sing it in both directions. However, in line with what was said before, he could only retain a two or three beat pattern, with the remainder getting lost in his memory, and over time we were able to stretch that window substantially.

As I often do in Eurhythmics and Music Skills classes, I wanted to use the piano as another way to process the music skills we had been learning. A typical exercise in a skills class might be to first sing the scale while moving a hand straight up and down in discrete spatial units, or to sing the scale while walking its steps, in order to develop a connection between pitch movement and spatial movement. Such a game develops a natural instinct for musicality and nuance and adds dimension to a student's conception of melody. The scale is then taken up at the piano, using the white keys. Because they have already worked with the concept of a scale extended in space, comprehending the scale at the piano comes naturally and they can quickly use segments of it to improvise. I begin by showing them C, and letting them count up and down the piano's white keys using their knowledge of the alphabet: B must be a step below, D a step above, the piano alphabet stops at G and starts over, etc.

Ian's retention issues immediately came to the fore: he couldn't consistently remember where middle C was. He quickly grew impatient with the exercise because he was obviously aware that he should be remembering how to find this key, but couldn't. So we settled into a long, gradual routine: every class began with ten minutes on drilling Ian on finding middle C. This period went on for over a couple of months. Every week I tried to find some new way Ian could go at the question of remembering where C was: some other angle on the subject, some new stepping stone I hadn't thought of before. I would have Ian play middle C, close his eyes for three seconds, and try to find it again. It didn't work. So I had Ian take a step away from the piano, take a step back to it, and play C again. After a few tries Ian made this work, using a clear strategy: he kept his index finger pointed at the C. When he kept that direct line from his finger to the C, he could find it again.

Having found a successful intermediate step I stretched it a bit. I had him take two steps back from C. He kept his finger vigorously pointed at the C and tried to get away with taking two very small steps. The plan worked, but when I made him take two natural steps, he lost the direct line of vision from the finger, and was unable to find the C.

I was now in the place one wants to be in a cognitive eurhythmics lesson: we had found a game to play that highlights a cognitive difficulty, and gives the child a sense of his difficulty not as some abstract or coldly medical thing, but as a challenge he can see, feel, sense, and understand. When children are presented with this type of challenge they rise to the occasion playfully and unself-consciously. It remained to be seen whether this challenge was too much, in which case it was my job to find a new stepping-stone that sat between what Ian could do and what he couldn't. This challenge proved to be within Ian's threshold. Within a few weeks he was able to step further and further away and still find the C. Gradually I had him sit on chairs on the other side of the room, leave the room and say hi to his dad, etc., and then come back and find the C, until he could do it first thing in the lesson. This took another month.

With most children, I teach them the solfège scale (do re mi etc.) in their Skills work and the letter scale (C, D, E) in their piano work, and show how they correlate. Children have no trouble absorbing different languages and terms, and provided they have the scale in their bodies and voices beforehand, this is never any problem. I had to decide how I was going to modulate this curriculum for Ian. Ian had always expressed a vigorous natural musicality in song and movement, and had an additional fascination with language. He liked singing the solfège syllables, so that was what I stayed with. I thought the alphabet correlates would be too complicated for me to communicate without confusing him. So I switched to teaching him to find "do" rather than middle C. I then showed him the scale relationships in movement, showing him how you could "walk up the keys" singing "do, re, mi, fa, sol, la ti, do". He quickly associated bouncing up the keys with his finger and singing the scales.

To find other notes besides do, I showed him how he could count the keys silently in his mind until he got what he wanted. If he wanted fa, he could silently count and bounce "do, re, mi" and land on fa. We spent several lessons getting familiar with how to reach the different notes in isolation.

If you can identify a series of different notes, you can play a children's song. I began experimenting with different approaches to notation to see what would be the best way to deliver a written song to Ian. I already knew Ian had no trouble with rhythmic notation, so I thought pitch notation might go just as well. For a while it did.

I follow the Dalcroze method of teaching written notation by starting with a one-line staff and teaching the concepts of on, above, or below the line. Once those are solid, we move to two lines, and start learning to count alternating lines and spaces. I use the same approach for written notation as for finding notes on the piano; I tell them once they know one note in a song, they can figure out the rest for themselves if they can count their way around. I find this a superior way to teach reading music.

Ian had no trouble with the on, above, and below. However, the multiple lines quickly started to overwhelm his retention. To work further in this direction, I was going to need very large staff paper so that the clustered lines would separate themselves in his perception, and the detailed array of concepts needed to navigate the notation was going to take at least several months. Fortunately his language skills were sufficient that he could read the words "do", "re" etc. when they were written. So I drew the notes in, but as a stopgap I also wrote the names of the solfège syllables underneath each note. This system was sufficient for Ian to navigate a children's song, and we learned "Twinkle Twinkle" and "London Bridge".

There were many directions to go further in turning Ian into a piano student. Learning to navigate the five lines of notation was one; gaining fluidity in scale fragments -- sets of two or more

notes in the scale at a time -- so that he didn't have to process each note individually would have given him more options. At that time we had to stop our work. Nevertheless, getting Ian to play a song on the piano after a year and a half of dedicated work shows that if you can find the right stepping stone, a child will always take the leap.