

# This is Your Brain on Choral Music

by Stuart Chapman Hill

**W**hen someone asks you what you teach, how do you answer? Maybe you simply say you are a music teacher, or perhaps you get more specific: “I’m a chorus teacher,” or “I teach general music.” Whatever your stock answer may be, I bet you do not default to, “I’m a brain teacher” – even though truer words could hardly be spoken. All teachers, regardless of subject matter, teach *brains*.

This may seem an obvious statement – of course we teach brains! – but I think many of us focus more often, and more carefully, on the physical manifestations of musical activity (posture, hand position, mallet grip, adduction of vocal folds) than on understanding and attending to the mental activity that underlies them. As North Carolina’s own Donald Hodges has reminded music teachers in his writing, “The brain is a learning machine. Learning is *what it does*.”<sup>1</sup> As music teachers, it is our responsibility to make sure we understand the learning machines filling our classrooms as well as we can. I would like to share two big *brain ideas* I recently presented in my “This Is Your Brain on Choral Music” session at the NCMEA Professional Development Conference, with the hope they will help you think about how to make your teaching more brain-informed.

## The Brain is Natural Pattern Seeker

Many scholars have written about the fact that the brain is designed to extract patterns and structure from the disparate input it receives.<sup>2</sup> Like a scientist constantly at work, the brain considers the evidence at its disposal, develops generalizations and conclusions, and tests them repeatedly in order to refine what it knows. For teachers, this means we need to be careful about how we conceive of the “scaffolding” so often championed in teacher education courses and professional development sessions. Certainly, we must help students connect new knowledge to what they already know, and teachers have an important role in helping students pace their learning so it is challenging enough to prevent boredom, but manageable enough to prevent frustration and exhaustion. The line between scaffolding and spoon-feeding, though, is vanishingly thin – and learning sequences can be come over-scaffolded if they leave no room for students (and their brains) to engage in the act of discovery.

What does this mean for you and your music classroom? First, it challenges music teachers to think carefully about how they teach rote songs. (Rote is not necessarily a bad word. Although equipping students with the music literacy skills they need to be independent is critical, learning rote songs can be an important part of developing students’ aural skill, which is equally important.) Many teachers follow a phrase-by-phrase or whole-part-whole sequence when teaching a new song, but, as Susan Kenney has explained in a helpful pair of articles in *General Music Today*,<sup>3</sup> a whole song approach may be better, since it allows the brain to discover phrase structure, melodic



contour, and so forth on its own. When I teach a new canon to a choir, I sing the entire canon multiple times before asking the choir to sing it back to me. With each repetition, I provide a new “landmark” to help guide students’ listening: “Listen again, and this time try to figure out how many phrases there are on this song,” or “This time, focus on which pitch is the highest and which is the lowest.” I have found that, after about four or five repetitions, students can sing the song almost perfectly on their first attempt. This may not be *faster* than the “phrase-by-phrase” approach, but efficiency is not always the goal. There is reason to suspect allowing the brain these opportunities to engage in its own discovery processes may result in *deeper* learning of the material.

For ensemble conductors, this may mean sharing more of the score study process with students. We often think of score study as what prepares us to teach a piece: we examine the parts, identify the challenges, and design our plan for “breaking down” the piece for students. Careful score study will always be an important part of being an effective ensemble leader, but it may be time for us to question the value of how much we break down pieces for students. Instead, perhaps we should create space and time in our ensemble classrooms for students to engage in some score study themselves. Students can be asked to look for all the things a conductor would consider when studying a new score: where are the harmonic shifts? What are the main melodic motives? What are the salient rhythm patterns? What kind(s) of texture(s) does the piece employ? Allowing this opportunity for exploration and discovery can create what one of my college professors used to call the time for teaching: after having the chance to wallow in the messiness of learning a new score, students are primed for the conductor to bring her expertise to the table and help to lead the way.

## Learning is Social—Really, Really Social!

Although classroom activity is mediated by the activity of individual students’ brains, it is also true that learning depends on the actions of brains working together in concert – and who should understand this better than music teachers? Hodges points out, “Neurologically, we are wired with shared attention mechanisms... Structuring group-learning projects into the curriculum is an effective way to improve learning efficiency.”<sup>4</sup> As music teachers, we may think of what we do in our class

rooms as fundamentally social and collaborative, but there may be more room for true cooperative learning techniques than we always allow.

One of my favorite cooperative learning techniques is the “jigsaw” technique.<sup>5</sup> I often use this technique in the college classes I teach, since it is an efficient and effective way to divide and conquer on a reading. I divide the students into groups and assign each one a particular section of an article to read (or re-read), which they then consolidate and synthesize in a few salient points. These groups then share their findings with the whole group. I record everyone’s bullet points on the whiteboard, forming one comprehensive outline that captures the class’ collective understanding.

What if, rather than jigsawing an article or book chapter, students jigsawed a piece of music? The in-class score study activities I recommended earlier would work beautifully in a jigsaw format. One group could be assigned to study the piece’s form/structure, another to explore the text and translation, another to figure out the piece’s rhythmic “skeleton,” and so forth. Again, this is not intended to remove the responsibility of score study or scaffolding from the teacher; rather, it gives students deeper experiences with exploring the musical material and situates this exploration in a cooperative, social activity. The teacher remains the overall guide, helping students to organize and synthesize what they learn in their jigsaw groups.

These are just a few suggestions, and there is much more to learn and subject to classroom experimentation. Both *Music Educators Journal* and *Choral Journal* have recently devoted special-focus issues to the connections between neuroscience and music pedagogy. The smartest thing devoted brain teachers can do is keep questioning, experimenting, and reading, so we can keep those learning machines in our classrooms active and growing.

## References

<sup>1</sup> Donald A. Hodges, “Can Neuroscience Help Us Do a Better Job of Teaching Music?”, *General Music Today* 23, no. 2 (January 2010): 3.

<sup>2</sup> Usha Goswami, “Principles Of Learning, Implications For Teaching: A Cognitive Neuroscience Perspective,” *Journal of Philosophy of Education* 42, no. 3–4 (2008): 381–399; Hodges, “Can Neuroscience Help Us Do a Better Job of Teaching Music?”; Donald A. Hodges and Wilfried Gruhn, “Implications of Neuroscience and Brain Research for Music Teaching and Learning,” in *The Oxford Handbook of Music Education*, ed. Gary E. McPherson and Graham F. Welch (New York, NY: Oxford University Press, 2012), 1:205–233.

<sup>3</sup> Susan Kenney, “Brain-Compatible Music Teaching,” *General Music Today* 23, no. 1 (October 2009): 24–26; “Brain-Compatible Music Teaching Part 2: Teaching Non-Game Songs,” *General Music Today* 23, no. 2 (January 2010): 31–34.

<sup>4</sup> Hodges, “Can Neuroscience...”, 8.

<sup>5</sup> See [www.jigsaw.org](http://www.jigsaw.org) for a thorough explanation of this technique.

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