

Tales from the Classroom: Why Do We Part-Write?

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Note: This article is intended primarily for faculty who are teaching first-year theory and wish new insights into teaching part-writing.

Introduction

Picture it: Two o'clock on a Wednesday afternoon. The students in my first-year theory class are gathered in groups at the white boards, workbooks and dry-erase markers in hand. Their brows are furrowed, and they are talking (mostly quietly) among themselves as they puzzle over a particularly knotty figured bass that includes a secondary dominant and a common-chord modulation. I am seated at the piano, observing their interactions as the boards come to life with brightly-colored Roman numerals and musical notes. Some groups have written a team name above their work (the Bacheneers, the Leading Tones, the Trouble Clef). Some are practicing division of labor, with one student interpreting the figured bass, another spelling the chords, and still another writing on the board. One student steps back to review his group's effort, then grabs an eraser to remove a set of parallel fifths, in hopes that he has spotted them before I have.

Acknowledgments: I am grateful to Stylus Publishing for the use of the image of the learning cycle from *The Art of Changing the Brain* by James Zull; to my colleague Jamie Doran of the Accounting Department at Muhlenberg College for the term "courses of accretion;" and to my amazing students in Music Theory I, Fall, 2012, for their comments quoted throughout this article.

I ask: “Why do we part-write?” They answer: “Because you tell us to!” We share a laugh, but then we begin to talk about what part-writing is really all about, and, as it turns out, it is not just music theory.

In this article, I will discuss the brain-based learning that drives my pedagogy; I will outline how I teach part-writing and why I teach it the way I do; I will offer suggestions for meeting some of the challenges we face; and I will argue for the significance of part-writing beyond the theory classroom.

Music Theory, Learning, and the Brain

I have long maintained that music theory is both the hardest and the easiest subject to teach. Let me begin by describing why it is the hardest.

Music theory courses are skill-building courses, similar to courses in mathematics, language, or accounting. Students encounter:

- a symbolic language (Roman numerals, for example) used to describe another symbolic language (music notation), and these languages use a specialized vocabulary and a tightly-constructed syntax;
- written, aural, and oral components;
- a volume of detail that can be overwhelming;
- a certain level of exactitude (there is, after all, only one way to spell a C major chord);
- and a demand for consistent effort.

Then, at the end of the first year, chromatic harmony in all its complexity is just over the horizon. Students must learn to be comfortable with ambiguity when what they really want is the right answer.

And theory teachers face a number of pedagogical challenges:

- we teach “courses of accretion,” where each unit builds on what went before, so we have to help our students connect new ideas with previous material;
- we continually evaluate student progress, which means lots and lots of grading;
- and, perhaps most importantly, our students commonly experience anxiety due to the perceived difficulty of our courses. At the liberal arts college where I teach, music theory has the reputation of being one of the three hardest courses on campus.

So, yes, theory is hard—for us, and for our students. But now let me argue that it is also the easiest subject to teach.

In *The Art of Changing the Brain*, author James Zull builds on the work of David Kolb (and others) and describes a learning cycle that consists of the following four activities:

- 1.) concrete experience
- 2.) reflective observation
- 3.) abstract hypotheses
- 4.) active testing¹

As Zull says, “The cycle is based on the proposal that learning originates in concrete experience; hence the term *experiential learning*.”²

¹ James E. Zull, *The Art of Changing the Brain: Enriching the Practice of Teaching by Exploring the Biology of Learning* (Sterling, VA: Stylus Publishing, 2002), 17.

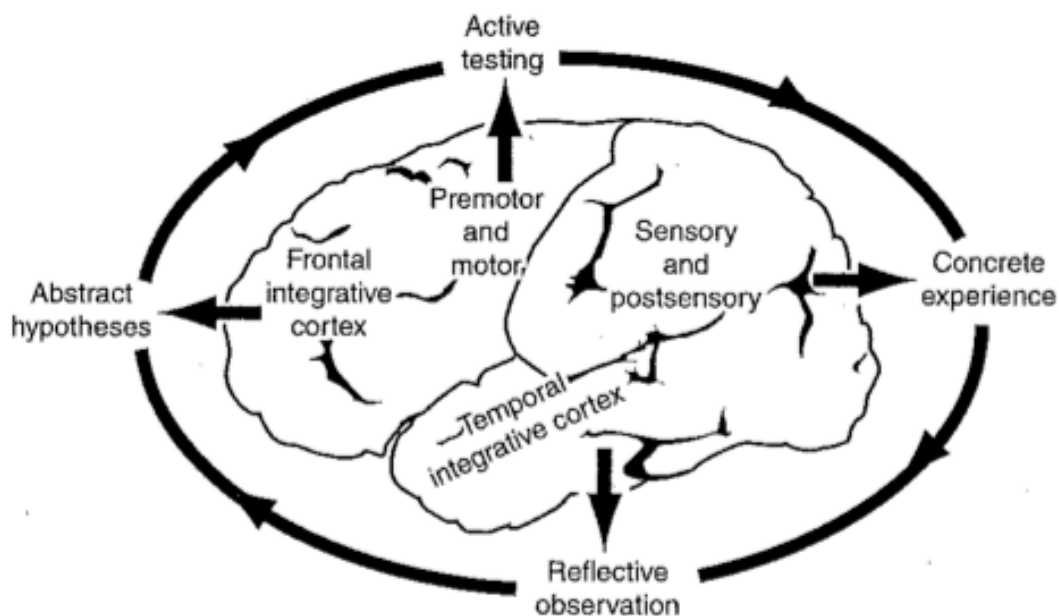
² Ibid.

Zull, a biologist and biochemist, then goes one step further. He points out that the flow of information processing in the brain follows this path, beginning with sensory input:

- 1.) sensory and postsensory cortex
- 2.) temporal integrative cortex
- 3.) frontal integrative cortex
- 4.) premotor and motor cortex

After the fourth step, motor output becomes new sensory input, and the circle is closed.³

Zull then superimposes the learning cycle onto a model of the brain, thus making his argument that learning is biology.⁴



³ Ibid., 16.

⁴ Ibid., 18. Used by permission of the publisher.

Music fits beautifully within this scheme. We come to music by performing it. Our first experience of music is usually singing in a choir or playing in a band or orchestra. It is *sensory* and *concrete*, which is where the learning cycle begins. As we become better at music, we begin to *integrate* the experience of singing or playing with higher-order processes. We think about how we are singing and playing (reflective observation), and we wonder if we could be better than we are (abstract hypotheses). We try a different breathing technique or a different fingering (active testing), that becomes a new concrete experience, and the cycle begins all over again.

Neuroscientists tell us that music activates more different areas of the brain than any other single endeavor. In studies of people experiencing music (playing, listening, or even just thinking about playing or listening to music), the brain is on fire with cerebral activity.⁵ Music and the brain are natural companions, and that synergy is a powerful pedagogical tool. Recruiting biology as our pedagogical partner makes teaching music theory easy.

The Pedagogy of Part-Writing

Mapped onto the learning cycle, teaching part-writing looks like this:

1. *Concrete experience:* We introduce the material in an engaging way (never underestimate the value of enthusiasm), and we provide clear explanations and examples. If you use the Bach chorales as models as I do (more on this later), play Bach for your students. Give them copies of the chorales from the *St. Matthew*

⁵ See Daniel J. Levitin, *This Is Your Brain on Music: The Science of a Human Obsession* (New York: Penguin Group, 2006), 154, for one example.

Passion, for example, and play recordings of the chorales from high-quality performances. Then have your students sing them.

2. *Reflective observation*: Ask your students what they notice. Anything they say has validity as long as they are referencing the music. One student might point to the smoothness of the vocal lines, another to a particularly interesting 7th chord. I usually wait until this point to perform a Roman-numeral analysis, because I want the students to observe the chorale and grasp its *gestalt* before they turn their attention to vertical structures.

3. *Abstract hypotheses*: After giving the students an example of a figured bass to realize, ask them how they think they should proceed. This empowers them to solve the problem themselves by using what they observed in step 2 above. If you need to offer some strategies for dividing the material into accessible parts, you could suggest that they begin by deciphering the figures and writing down the Roman numerals. Then they might progress to thinking about the spelling of each chord before finally moving to notation.

4. *Active testing*: We give our students lots of exercises for practice. Not surprisingly, this involves the motor areas of the brain. My students do almost all of their part-writing at the boards; it reinvigorates them by getting them up and moving. Active testing closes the loop on the learning cycle.

But have we really changed the brain, as Zull says? Changing the brain depends upon synaptic plasticity, the ability of the brain to form new neuronal networks. We help our students create knowledge by encouraging the firing of existing synapses that carry information the student has already stored and can use

to grow new networks. To paraphrase Zull, networks that fire together wire together.⁶ Conversely, we want the synapses that carry “wrong” knowledge to shut down.⁷

Theory teachers give lots of feedback on assignments, but all too often that feedback is delayed by several days and consists mostly of pointing out errors. This traditional process of homework and grading interrupts the learning cycle and works against the biology of the brain. By focusing on the mistakes, we reinforce what is wrong, not what is right! The neural networks that have “learned” parallel fifths will become stronger, and the newly forming networks that know how to avoid them will become weaker. Zull goes so far as to claim that we might be better off ignoring the error than correcting it.⁸ You might argue that errors create teachable moments, but I think we need to handle those moments with care.

How can we create an environment of positive feedback? Once the students have completed their realizations at the boards, we play and sing what we have written.⁹ We talk about what we like and why. One student may say to another, “Your alto line is really nice—see how it flows and how important it is to the harmonies.” Or, “I like the way your soprano line evolved—it has a high point in just

⁶ Zull, *The Art of Changing the Brain*, 118.

⁷ For an expanded discussion of this, see Zull, Chapter 7.

⁸ Zull, *The Art of Changing the Brain*, 123.

⁹ You have undoubtedly noticed that there is a lot of playing, listening, and singing involved in part writing in my classroom. Written theory and aural skills fit hand in glove. If they are taught in separate classes at your institution, I hope you will work to integrate them in your classes, because I think you will find they support each other in dramatic ways. As one of my students told me, “There is some instant gratification when we go to the boards and part-write and you then play the piece at the piano, which I think is good because we get to experience the rewards of our hard work almost immediately, which is not true of every activity in life.”

the right place.” I might add, “You remembered to raise the leading tone – congratulations!”

Only then do we begin to critique each other’s work, and we work together to solve any part-writing problems that have occurred. This student-centered approach, where the students are generating comments and corrections, has had good results for me. On an end-of-term evaluation, one of my students wrote: “I don’t think you have ever made anyone feel bad for having the wrong answer. You just say, ‘That’s okay! Does anyone see the problem? What’s the best way to fix it? We can fix it!’ A wrong answer never stops at a wrong answer. You take us through each step, as long as the class needs, until we figure the correct answer. I learn better this way.”

As part of building and strengthening new neural networks, I think we need to take one more step. Students become so absorbed in the local (is that chord spelled right?) that they miss the global (does that harmonic progression make sense?). By asking our students to step back and look at the logic of what they have done, we are moving beyond the teaching of harmony to the teaching of tonality.¹⁰ Understanding that the discrete elements they are mastering combine to form the patterns and relationships that drive tonal music gives the students a sense of purpose. And if we are fortunate enough to work with the same students over several semesters, subtle changes in the way they think will manifest themselves. By the time my students get to their 4th semester of theory where we study entire

¹⁰ For more on harmony versus tonality, see Michael R. Rogers, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies* 2nd ed. (Carbondale, IL: Southern Illinois University Press, 2004), 53-57.

pieces, that moment at the beginning of the development in the first movement of Beethoven's "Pathétique" Sonata is no longer an isolated example of an enharmonic diminished-seventh modulation, as it is presented in one well-known theory textbook; even though that passage was a workbook exercise, the students have no recollection of it. Until now. As part of a whole, that wonderful moment now has a home, a *raison d'être*. It is a distinctive functional feature of this piece and part of the students' developing understanding of Beethoven's style. In my experience, this is a "wow" moment with a significant emotional component. Synaptic change is a complex process that occurs over time, and measuring it is no easy matter, but in conversations with my students long after they have completed the theory sequence, they recall this passage. The brain encodes as important things that carry emotional weight.

Meeting Challenges: Anxiety

Practicing positive reinforcement has the potential not only to change the brain but also to help us meet one of our greatest challenges in teaching music theory: reducing anxiety. The literature on learning has long recommended that we foster a climate of "relaxed alertness" in the classroom. But just how does one go about doing that? As mentioned above, many of our students approach music theory in a state of high anxiety. Anxiety blocks learning very effectively, and even the most sophisticated pedagogy fails in the presence of fear.

Bach to the rescue! When we are starting to learn a new concept, I begin with Bach. I think the Bach chorales are ideal teaching tools and perfect models for four-part writing. Bach was among the first to practice tonality consistently. His

chorale harmonizations range from the fiercely diatonic to the daringly chromatic. He packs more harmonic activity into fewer measures than almost any other composer. The chorale texture is transparent: the voice leading is easy to follow, the embellishments stand out as moving eighth notes. The chorales are easy to sing (Bach's harmonizations were, after all, written for untrained musicians in his Lutheran congregation), and most students can learn to play a four-part hymn. If, as I suggested above, you expose your students to the chorales in the *St. Matthew Passion*, it gives them the opportunity to see and hear several different settings of the same chorale ("*O Haupt voll Blut und Wunden*"). The elegant logic of tonality is on display—the statement of tonic, the move away, the inexorable predominant/dominant/tonic motion occasionally delayed by a splendid deceptive cadence—the obvious and the not-so-obvious are all there. Michael Rogers calls the chorales “minor masterpieces of artistic construction and expression.”¹¹

Examining Bach gives me the opportunity to explain how theorists observed the work of composers and noted what they consistently did and what they consistently avoided, i.e., theory follows practice. I also point out that music is based on physical phenomena. The spacing conventions (no more than an octave between any two adjacent upper voices, for example) have their foundation in the harmonic series. The “rules,” as it were, are not arbitrary, designed to torture twenty-first century theory students! Many of them are formulas that composers use because they sound good, and they sound good because they are grounded in physics.

¹¹ Ibid., 53.

While I rely on the chorales as I introduce new material, we move quickly to other examples. I show my students how the principles embodied in the chorales are present in other styles and genres. What I often call “Bach’s favorite progression,” ii-V-I, is a musical formula based on the circle-of-fifths that has survived Bach to become today’s “jazz progression.”¹² And my students who transcribe and arrange music for their own use have shared with me that thinking about voice-leading and part-writing makes their music easier to sing and play.

Meeting Challenges: More on Anxiety

Collaborative work also reduces anxiety. Today’s students thrive on connections—spend just five minutes on Facebook, and you will see how much their relationships mean to them. Creating an environment that reduces anxiety by encouraging collaboration makes learning enjoyable. Eliciting a positive emotional response to learning may be the best pedagogical tool you possess.

And peer teaching is incredibly powerful. No matter how many times and how many ways I explain a concept, having a peer put it into words often results in an epiphany for a struggling student. If teaching someone else is the best way to learn, both students benefit.

My students have also reported to me that they are most engaged when we are part-writing at the boards, and I have observed an increase in their energy level as their competitive natures come to the fore. Their fear subsides, they want to excel, and they are determined to finish before the other groups and to get it right.

¹² I also remind my students that, were he alive today, Bach, presumably a consummate improviser, would be a superb jazz musician. Some things are timeless.

Why Do We Part-Write?

When I ask my students why we part-write, it is not an idle question. I want to know what they think, and they want to know why they are being asked to engage in this particular activity. So let us step back into my classroom. As the discussion unfolds, I realize that I want to capture their comments. For an end-of-term reflection paper, I ask them to answer this question: “Several years from now when you think back on this course, what aspects of the class do you think will have had the most impact on your learning and intellectual development?” Here are some of their answers:

“Part-writing is a strenuous activity which requires me to think of several things at once, and I would not be surprised if it is improving my ability to focus and multitask.”

Part-writing “taught me how to problem-solve with peers. Working . . . with a group was a valuable tool because it allowed me to see what approaches others used and from that figure out what worked best for myself. . . . There isn’t always one way to reach a solution in music, so working with others allowed me to see other options and ways of doing things that were very helpful.”

“ . . . a great deal of thinking goes into a person’s given day and much brainpower is exerted. Music theory teaches, sometimes the hard way, to use the principle of Occam’s Razor; in that, sometimes, the simplest answer is best. A complicated part-writing assignment is, in some ways, a microcosm for life—there’s no need to do more than what’s necessary—just remember not to anger your mother-in-law and not to double the leading tone and life will go on.”

“Part-writing taught me that while I have to drill these concepts, I cannot put too much pressure on myself when I am learning. After all, it is a PRO-CESS; a balance of focus and patience is needed in order to truly intake everything I learn in theory from now on because it is such a big, vast topic. The way I approach learning theory now can carry over to everything else I am going to learn in college and in the future.”

Part-writing does, of course, teach us many things about music. The students develop fluency with key signatures, chord spelling, and inversions; an understanding of the difficulties inherent in minor because of the mutable nature of scale degrees 6 and 7; and a new appreciation for the challenges of music composition.

But I believe the benefits of part-writing go well beyond the music classroom, and I think these benefits are often overlooked. Like our students, who can become so focused on each note that they miss the musical line, we experience “tunnel vision,” and we cannot see beyond that pesky set of parallel fifths. Part-writing teaches a particular set of problem-solving skills that we can use all our lives.

The students quickly become aware that there is a constant and unrelenting tension between vertical structures and horizontal motion and that their job is to resolve that tension. (“But, Dr. Follet, I spelled the chord right, and I moved by step. What do you mean, augmented second?!?”) As they grapple with part-writing problems, they are learning to grapple with competing demands in the face of limited resources—in the immediate case, a musical style with a well-defined set of parameters. As students learn to balance the competing interests of the vertical and

the horizontal in a part-writing assignment, they are developing a level of mental agility that will foster success in other domains. Fashioning a phrase of music from the pieces of a part-writing puzzle is an exercise in problem solving that encourages creativity and intellectual rigor. By working collaboratively (and publicly, at the boards, where others can observe them), they are modeling for one another behaviors that will serve them well in their professional and personal lives.

Part-writing is not, of course, the only endeavor that extends beyond the boundaries of the classroom. But, for me, it is one of the most tangible, highly visible, and easily recognizable. And when I ask my students why we part-write, I know by their answers that they feel the same way.

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