The following article describes a pedagogy that immerses students in two kinds of composing. First, students research and write argumentative essays in a traditional academic environment; then in a digital recording studio, students reframe those arguments in a different medium by composing original abstract electronic music. This pedagogy shows students the practical and theoretical connections among two seemingly disparate processes and provides them with an opportunity to explore and express their positions on controversial issues in multiple media.

... Though my formal education is in rhetoric and composition, for the last 20 years my personal passion has been writing, recording, and publishing both experimental and popular electronic music. My need to make music and share it with the public through commercial venues is an unquenchable, emotional thirst. Similarly, my doctoral training in writing pedagogy provides me with a kind of intellectual stimulation and satisfaction unavailable elsewhere.

Given these two drives, I’ve always wondered how I might harness the emotional and intellectual power of electronic music to teach my writing students about the rhetorical power of a well crafted argument. On the surface, these two modes of expression--academic writing and electronic musical composition--seem rather disparate. But because I work professionally in both mediums, the connections between them, especially on an instructional level, are apparent. Rather than simply discuss the rhetoric of electronic music with my students, however, I’ve always wanted them to engage in actually composing original electronic music at the same time they are practicing written argumentation in an academic setting; in doing so, I would hope to examine the nexus among these two arts and two composing processes, as well as explore the ways artists might construct effective arguments on controversial issues in multiple media.

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Through trial and error, I've managed to develop a pedagogy that allows students to immerse themselves in these parallel activities and experience firsthand the connections among them. In this article, I will discuss this "pedagogy of composing," while focusing on the history and nature of electronic music. Most important, I would like to explain, in detail, some of the successes my cross-disciplinary students have had in constructing arguments and expressing their positions on controversial issues in writing and sound.

**EARLY AND CONTEMPORARY ELECTRONIC MUSIC**

Before examining the logistics and results of this pedagogy, a brief discussion of the history of electronic music--and a look at the contemporary landscape--is in order. Electronic music most likely originated from the work of Vladimir Ussachevsky, an untenured faculty member at Columbia University in 1951. Ussachevsky was charged with caring for the only tape recorder owned by the music department--an Ampex 400. The tape machine was requisitioned for recording live performances and for teaching purposes, but as it turned out, Ussachevsky--with the assistance of engineering student Peter Mauzey who created an echo chamber he called a "feedback box"--began manipulating recorded material. Through repeated experimentation with this technology, Ussachevsky created new, alien compositions, the likes of which had never been heard before. For the next twenty years, he along with colleagues Otto Leuning, Leopold Stokowski, and others set many milestones, including the first live performance of electronic music in America at the Composer's Forum in New York City in 1952, and ultimately the founding of the Columbia-Princeton Electronic Music Center (Shields, 1991).

Half a century later, contemporary musicians and composers of electronic music have managed to keep alive the vision of musical pioneers like Vladimir Ussachevsky and Otto Leuning, while continuing to stretch the boundaries of what we call music. Examples are Bernhard Günter’s (1996) moody, skittering electronic landscapes; Francisco Lopez’s (1996) menacing, 30-minute crescendos of static and modified environmental noise; and the mesmerizing, skipping-compact-disc-ballads of Markus Popp's (1996) Oval. Today, there are entire record labels which have identified themselves as purveyors of contemporary minimal (and ambient) electronic music. Likewise, the technological landscape has changed considerably since the 1950s, and today's composers are dissecting, warping, and synthesizing sounds with the click of a mouse. Indeed, the pallet of sound has been altered so completely that even the language surrounding this music has shifted; contemporary artists use the word "music" less and less to describe what they create, opting instead for terms like "glitch," "granular synthesis," "snap-crackle-pop," "loops," "clicks and cuts," or the more general term "noise" or "sound constructions" (Young, 2000, p. 52). The term "glitch," in particular, is defined by contemporary sound artist Frank Bretschneider (2002) as "the emergent subgenre of experimental electronic and electroacoustic sound constructed around digital errata like half-captured samples and scrambled sound files. The resulting music sounds as though there is a virus afoot that caused samplers and hard-disc recorders to crash, leaving producers with only the remains of mangled data to construct their tracks" (p. 1).
THEMES IN ELECTRONIC MUSIC

What possible connection could the evolution of electronic music have to the teaching of writing—or to our students’ lives? After all, today’s college writing classrooms are geared to help students understand the nature of rhetoric, navigate the world of research, learn about discourse in different professions, and practice constructing academic arguments.

While the connections may not be immediately apparent, they are there. For example, the technology, ideology, and artistic style characterizing electronic music are cornerstones of the larger youth culture our students are steeped in. Sampling technology itself—the process of digitally capturing and manipulating prerecorded sound that Frank Bretschneider discusses above—is an integral component of every Billboard hit currently on MTV2. Rap, Hip-Hop, and Electronica of the past 20 years have heavily relied upon sampled loops of prerecorded and electroacoustic sound for song structure. Even contemporary guitar-oriented music uses sampled drum loops and other sample-based studio effects. Beyond the act of sampling itself, the collage-oriented, “cut-n-paste” mentality that undergirds sampling technology is prevalent in our student’s way of thinking. (Of course, the inappropriate use of this approach has led to innumerable accounts of plagiarism in both writing classrooms and at the Grammy Awards—an issue I discuss with my students; however, this larger issue falls outside the immediate scope of this article.) Another connection is the sheer availability of technology for music-making, downloading, and listening. From the IPod to CD burners, music and its attendant technology is ubiquitous in the lives of our students. Unlike Ussachevsky—who guarded the single tape machine owned by Columbia’s music department in 1951—today’s aspiring musical artists can purchase a laptop for several hundred dollars; create original music; and burn, market, and sell their own compact discs on the internet with ease.

But perhaps the most useful connection among the worlds of electronic music and the college writing classroom lies in the use of rhetoric. While I am training my students to view all written communication as inherently rhetorical, many contemporary electronic musical artists are likewise using their compositions to rhetorical ends—they have their own agendas and use their music to express their views. By analyzing these works as a part of our writing class, my students and I begin to see how rhetoric can manifest itself in a variety of expressive modes. Terre Thaemlitz (2002) is a good example of a contemporary electronic artist whose music is infused with an agenda. As a self-prescribed "transgendered, non-spiritual, socio-materialist," Thaemlitz's electronic and electroacoustic compositions tackle a variety of themes, including the commodification of sex and gender, the erosive forces of capitalism, and the questionable purposes of conventions and social standards. One collection of tracks includes individual titles like "Fragmentation/Standardization (Love Now Angrily in Protest)," and "Trans Am (Transgendered American)." Thaemlitz's most recent project, Lovebomb, is an attempt to argue that love, as a socially-constructed and socially-acceptable behavior, is used by human beings to justify unacceptable acts, like physical and emotional violence. He states:

Outside the framework of romance, we can see how a terrorist's actions are an act of love conceived as protecting the ideals she holds dear. On a macro level, nationalism and the love of community
becomes a means of justifying violence and aggression towards others, such as America's love of freedom to justify bombing Afghanistan and Iraq. Love is not in opposition to violence, nor a cure for hatred, but actually an integral part of the justification for violence and hatred (Sun, 2004, p. 1).

Thaemlitz proves his point by carefully selecting and highlighting the elements that comprise each piece. The track "Between Empathy and Sympathy is Time (Apartheid)" is a good example. This composition features a People's Army radio broadcast in which the announcer encourages terrorism. According to Thaemlitz, the point of the piece is to "place extreme alienation within a moment of loving affiliation" (Sun, 2004, p. 2). While most people have a clear anti-apartheid stance, the violent speech Thaemlitz includes in the song forces listeners to examine their beliefs and affiliations.

Thaemlitz is not the only artist who has an agenda behind his contemporary electronic compositions. John Duncan also has a long history of "transgressive research in the name of art," and his release titled The Crackling--a meditation on the relationship between science and religion--is a testament to his inquiring mind. The CD is composed from digitally edited and treated segments of recordings made on location at the Stanford Linear Accelerator in California (SLAC), a steel structure more than three kilometers long where electrons are smashed into one another just below the speed of light and at temperatures of three billion degrees Kelvin. According to Duncan, the clattering blips, the subharmonic sinewaves, and white noise whooshes (all captured with carefully placed contact microphones and manipulated digitally in post-production) represent his inquiry "into the nature of humanity's view of its place in the cosmos, in light of new discoveries about the behavior of particles. By now it's pretty well established that science is the accepted frame for explaining our reality," says Duncan, "and in that sense it is trusted as a religion is trusted. But SLAC is just one example that shows just how clumsy scientific research can be. Putting faith in science to provide all the answers to all questions is a howling, tragic mistake" (Young, 1997, p. 6).

THE LOGISTICS OF CREATING A SOUND STUDIO

Taking a cue from musical artists like Thaemlitz, Duncan, and others, students and I discuss the evolution of electronic music and how rhetoric can manifest itself in a variety of forms beyond the written or spoken. But instead of simply having them imagine how they might represent their written views and ideas in the language of music, I want them to practice it. Hence, I have devised a pedagogy that allows students in a first-year writing classroom to practice argumentation--while conducting research and expressing their opinions on controversial topics--in two mediums: in the form of traditional, written "academic" essays and in the form of original electronic musical compositions. My students and I have been quite surprised by the theoretical and practical connections that exist between the production of electronic music and the production of academic writing. Certainly, my students learn a great deal from this cross-disciplinary endeavor; even though they have no prior musical training and are only beginning their journey toward becoming academic writers, many of them have experienced great success in being able to express their beliefs in multiple media. So that I might discuss in detail some specific student achievements, I will only briefly
outline the logistics of creating this cross-disciplinary classroom.

Each semester, I assemble my personal digital recording studio in a secure space near my regular writing classroom. Though I don’t want to overwhelm the uninitiated, the most important equipment in the studio includes a 16-track hard-disk recorder (a kind of tape recorder that allows individual tracks of sound to be recorded separately and then layered together), a microphone, a digital drum machine (a small electronic box that produces a multitude of drum sounds in perfect time, much like a professional drummer), a keyboard synthesizer, and a sampler (which, as mentioned, is a device that can “capture” and “alter” small snippets of pre-recorded or acoustic sound in limitless ways). At the heart of the studio is a computer that makes all of this hardware operate synchronously.

The students populating the studio are first-year writers in a first-semester composition course. Most of them have never worked with equipment of this kind. Because of their unfamiliarity, my role in the studio is largely as facilitator. Generally, I show them the equipment and demonstrate basic functions; once they seem comfortable operating in the studio (usually after two or three sessions), I fade into the background. From time to time, students may appear stuck or directionless, and they may explain to me certain sounds they are seeking. To help them in their discovery process, I might connect the equipment in various configurations or show them how to achieve certain effects. But generally I’ve found that today’s “technologically savvy” students are ready to experiment independently and do so with gusto. In addition to our regular class time where we discuss rhetorical issues and practice writing and revising our essays, students meet in the studio once or twice weekly, and they compose two to three separate musical pieces within a 15-week semester. There are no length requirements placed on the compositions, yet stylistically the pieces should fall under the broad category of electronic music—a genre that we discuss in detail and listen to in class, as I’ve mentioned. In addition, the compositions do not have to be instrumental; if vocals are included, the student may use his or her own voice, the voices of peers, or "found" voices from other sources.

Of course, students complete significant amounts of research and writing in the course as well. Like teachers in many first-year composition courses, I require students to write and revise four or five essays; some of these are narrative essays drawing from personal experience, while others are argumentative essays utilizing research and including documented sources. Students collect all their drafts and revisions, and they submit a final portfolio of revised essays at the end of the semester. But there is an added dimension: I request that the writing act in some way be tied to the act of making music, and vice versa. After the students and I discuss the history of electronic music and the way some contemporary artists use their music rhetorically, we begin the process of examining their own written arguments and how they might be expressed in sound. Students select one of their essays (usually one that has been completely drafted and may have been revised once) and begin to imagine what progression of sounds might represent their various views. On paper and in discussion with their peers, students answer a series of questions:

• What sorts of sounds would best represent the arguments and finer details in your essay? Would those be “found sounds” or musical tones of some kind? Would your composition be purely instrumental, or would it also contain voices? Where might those voices come from?
What kind of introduction, middle, and conclusion might your score have? (In other words, what sort of progression or movements would best represent your argument?) How long might your composition be?

What kind of emotional or intellectual impact do you want your composition to have on a listening audience? To make them think? To jolt them? To make them feel sad and alienated, or hopeful and secure? What sorts of sounds might lead an audience to have a suitable reaction?

After doing a bit of brainstorming, they gain access to the recording studio I've set up for them. They then create their own electronic pieces of music and attempt to make topical connections among their written and musical compositions. For instance, a student might choose to write an argumentative essay and record an abstract musical piece about xenotransplantation, the death penalty, animal rights, or gay adoptions. The idea is to have students explore the reciprocal relationship between the two arts and understand the conversation, or connection, that can exist among the two creative processes, following the lead of contemporary artists like John Duncan and Terre Thaemlitz.

When my students first enter the recording studio, some of them are apprehensive and afraid to touch the equipment. However, after a brief orientation session and an assurance that they are unlikely to break anything, most of them eagerly begin to “play.” Pounding away at the keyboard or the drum machine, speaking into the microphone, and fiddling with various sound processors—echo-delays, reverberation, pitchshifting. At first, this is pure fun, and many of them play with abandon, but eventually their attention turns toward the controversial issues they’ve been exploring in writing, and they begin the uncertain process of representing their views and opinions in a musical medium. Through trial and error (and my facilitation), most of them find their way. Though not all the results are stellar by any means, some students respond marvelously to this cross-disciplinary endeavor.

PARALLELS TO PROCESS THEORY

At the risk of stating the obvious, I’ve found that recording musical compositions and writing academic essays rely on practically the same cognitive and creative processes first described by scholars like Donald Murray (1972) in "Teach Writing as a Process not Product,” and later expanded on by Janet Emig (1977) in "Writing as a Mode of Learning," and Linda Flower and John Hayes (1981) in "A Cognitive Process Theory of Writing.” Although I realize the discipline of rhetoric and composition has essentially moved on from “process” to embrace notions of “post-process,” I cannot ignore the reality that just about every stop along the old writing-process route seems to exist in the recording studio as well. For example, in addition to the play-like brainstorming sessions described above that occur early on in the process, students draft, revisit and revise, and eventually publish their musical scores in class by sharing them with peers and obtaining feedback. The same ebb and flow of activity—as well as the recursiveness of the process—is present with students as they research, record, listen, layer, re-record, and finalize their musical compositions. In fact, as part of their final writing portfolios students submit for their course grade, I ask them to
include self-reflective essays that examine the practical similarities among the processes of writing words and writing music. Again and again, students are surprised to discover not only that rhetoric itself can take many forms, but also that the cognitive and creative processes required for self-expression might be somewhat universal.

Similarly, the opportunities for instruction regarding a number of formal, stylistic, and technical issues present themselves equally in both activities. In other words, I have discovered that a variety of “teachable moments” arise perennially in the recording studio that have direct parallels in the writing classroom. Some of these include:

• Form—Although our writing class focuses on a singular form (the essay), that form has many variants and may be rigidly structured or loosely organized depending on the writer’s purpose, type of audience, and the subject being discussed. The same is true for a musical composition. I ask students to consider levels of formality in relation to all their compositions, textual and musical.

• Organization—Writing an attention getting introduction and a compelling, organizing thesis very much mirrors the early themes or recurring sounds a student uses in a musical composition. Likewise, the way that theme purposefully plays out in the composition is similar to how an essay may be organized globally.

• Sources—Locating and synthesizing sources into a piece of original academic writing is a skill that takes great practice. When students are using sampling technology to create their musical compositions, the same skills apply. Students must do research to discover what prerecorded sampled sources might be appropriate and available for use. Then they must practice smoothly integrating those sources into their musical compositions, while taking care to acknowledge use of the source.

• Convention—Punctuation is a convention that serves a purpose and creates an effect, so to speak. The comma makes a reader pause momentarily, an exclamation point indicates emphasis, and a paragraph indent signals a shift in topic or focus. Similar conventions and effects exist in musical composition. When in the recording studio, students consider the effects of temporary pauses, larger silent sections between movements, and the effects of increasing or decreasing volume.

• Technology—the technology that drives both musical and textual compositions share many similarities. Music software titles—much like contemporary word processing programs—include functions to create new documents, edit existing documents, and import elements from external sources. And while word programs include “special effects” like numerous typefaces and sizes of fonts (bold, italics, shadow, outline, and text animation), music software includes options to apply dozens of effects like reverb, echo,
phasing, reversing, pitchshifting, and harmonizing. Contemporary students generally grasp these technological similarities very quickly, and they often discover how such effects might be used purposefully in their pieces.

**BECOMING BILINGUAL: TEXT AND AUDIO SAMPLES**

Asking students to construct arguments in two different mediums can be a challenging task. Some embrace the challenge naturally, while others understandably balk. The latter can't imagine expressing their views on the same topics in writing and sound, or they complain that they have no musical training and couldn't possibly create original musical compositions. Because some contemporary electronic music doesn't rely on traditional notation or chord structures however, this can free students from the constraints of not having a formal education in music, creating room for them to experiment.

Emily, a student in one of my first-year writing courses, represents that spirit of exploration. Like many students, Emily initially worked at researching and writing her essays, and then she took her written ideas into the music studio and attempted to represent them in sound. For one particular assignment that required students to defend a position on a controversial issue, Emily decided to tackle the subject of bilingual education. As a product of what she considered to be a flawed high school Spanish-English bilingual program, Emily spent most of her life feeling ill-prepared for schools where the dominant spoken language was English. Her view on this topic was clear:

After African Americans, Hispanics are the second largest minority group in the United States. Since their native language is Spanish, they immigrate to the U.S. and face a drastically different environment that revolves around the English language. For adults, the transition into this system is much more difficult than for their children. After all, their children are enrolled in school, have access to teachers, and receive proper instruction in the language. But is that really true? In my experience, the answer is no. In short, I believe that in some cases bilingual education can create more problems than it solves, especially for teenagers new to the system. It should be either abolished or radically revised in the New York City public school system.

The best way to illustrate Emily’s clever handling of her written and musical compositions is to compare excerpts from her written work and descriptions of the musical composition she created in kind (which share the same title, “A Superfluous System”). While these passages are fair representations of her arguments overall, the comparisons themselves are approximate because of differences in media.

**WRITTEN EXCERPT 1:**
In my opinion, the bilingual educational system keeps everyone separated because during the school day Spanish-speaking students are isolated from their English-speaking peers. I realize not all bilingual programs work this way, but mine did, and it was wrong. This structure does not give minority students exposure to
the English-speaking majority quickly enough, and it makes Spanish-speaking students feel like they don’t belong anywhere in the larger American culture. Additionally, it gives them the message that they should only stick with their immediate friends and families, and this oppresses minority students.

MUSICAL PASSAGE 1:
Emily decided to begin her short, three-minute composition with a minimal wash of white noise, almost inaudible at first and steadily increasing in volume. To the listener, it sounds like an undulating, alien wind blowing across a distant landscape. She claimed this sound represented how she (and other students she knew) felt when first introduced into the U.S. educational system—she was isolated, lost in the desert, separate.

WRITTEN EXCERPT 2:
As a student in a bilingual public school program, I experienced many problems, including teachers who were not themselves skilled enough in English to prepare Spanish-speaking students. How is a student supposed to learn English from a teacher who doesn’t really speak the language proficiently? Because of this, I was constantly confused about the English language, and I started to get the idea that learning to speak English wasn’t important. But wasn’t that the teacher’s job?

MUSICAL PASSAGE 2:
As the hissing sound grows incrementally louder, new key elements are introduced at minimal volume, underneath the white noise: these are chopped fragments and slivers of people talking, almost microscopic in length, and certainly not sustained enough for the listener to understand complete words or phrases. To achieve this effect, Emily brought into the studio educational cassette tapes—in particular language-learning tapes she acquired at the library—and she fed them into the sampling machine. She captured bits and pieces of the vocal sounds and tossed them into the mix at random.

WRITTEN EXCERPT 3:
I believe parents are the biggest victims of bilingual educational programs, however. At the school I attended, parents really don't have an opportunity to choose whether or not their children attend the bilingual program. They also don’t have a choice about what kind of program their children should attend. There are many different kinds of programs available that fall under the umbrella of “bilingual.” For example, English as a Second Language classes can be used within a program, or there can be alternating classes that are taught in Spanish one day and in English the next. But parents usually have to send their children to whatever program a particular school uses, even though a different kind of
class structure may better help the student.

**MUSICAL PASSAGE 3:**
As the stuttering snippets grow louder, they also grow more sustained, and it becomes clear that the sounds are English and Spanish voices being layered over one another, creating a cacophony of words and sentences. While a few isolated words can be understood at random, making linguistic sense of the jumbled voices is next to impossible. Emily applied a delayed echo effect to the voices to heighten the sense of confusion. The addition of a mechanical, rhythmic pounding sound represents what Emily considered to be the factory-like mentality of educational institutions that sometimes ignore individual parent or student needs.

The composition seems to come to a screeching close almost as soon as it begins. Just as the voices threaten to push the listener to the threshold of physical pain, they suddenly stop, leaving only an afterimage, a ghostly silence. Of course, on the surface the piece seems decidedly less nuanced than the written arguments included in her traditional academic essay. For instance, the sound composition does not include opponent's views, nor the opinions of outside authorities—both of which were requirements for this particular essay. Indeed, this is true in most of the students' musical compositions. The medium of sound requires artists to reduce their arguments down to the basic elements, while often using pathetic (emotional) approaches and appeals rather than logical ones. And the musical pieces seem to be generated from personal experiences and reactions, rather than documented outside sources. Nevertheless, the audio pieces have their own advantages, just as Emily's powerful composition attempts to show; these compositions often seem to capture a more guttural, immediate response to an issue than their written counterparts. In other words, these abstract electronic compositions provide an expressive, even emotional, venue for students who might be hesitant to explore pathetic arguments in writing (for fear of looking vulnerable or weak to their readers). Additionally, the medium of sound works well as an alternative for those who might be hesitant to use personal experience to flesh out their ideas in writing (for fear of self-disclosure). Accordingly, the written and musical compositions often complement each other quite well; as counterparts, they represent a student's view and experience in a holistic way.

**A PEDAGOGY OF COMPOSING**

In closing, allow me to quickly link these experiments in sound to the paradigm shift toward the study of visual rhetoric in composition studies. The influence of the visual in the discipline can hardly be ignored, especially with the appearance of almost a dozen first-year textbooks like *Picturing Texts* (Faigley, George, Palchik, Selfe, 2004), *Writing in a Visual Age* (Odell, Katz, 2005), and *Beyond Words* (Ruszkiewicz, Anderson, Friend, 2005). While the “rhetoric of sound” is unlikely to ever carry the same cache as its visual counterpart, there is merit in having students explore the rhetorical effect sound has on the daily lives of human beings. Just about every form of media we are regularly exposed to has sound as a component. Likewise, while writing students can easily embed visual images into written documents, the
same can be done with mp3 files in every major word processing program available today. Having students create experimental musical compositions that are linked to their written words further cements the idea that every form of communication—textual, visual, gestural, aural—is inherently rhetorical and inherently related.

By sharing this pedagogy with students—and by listening to and talking about electronic music--I've seen students realize that music, much like writing, can be a rhetorical construct and serve rhetorical ends. It can express ideas and opinions on controversial issues, and it can have a powerful, lasting, persuasive impact on an audience. (At the close of each course, students create a compilation CD of their tracks which is distributed to everyone. Students also play their musical compositions aloud in the classroom and share their writing with one another to highlight the rhetorical connections they've made.) By engaging in this larger act of composing, students see the ways that different mediums can powerfully explore and express different aspects of the same issue (and different aspects of themselves). Besides that, it's fun. I have thoroughly enjoyed spending time in the music studio with my writing students. Though time intensive, this cross-disciplinary approach to teaching writing has taught me a lot about the pervasive force of music in the lives of my students. I have also been exposed to new music (and new ways of thinking about music), and this has clearly helped me grow as both a teacher, writer, and musician.

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