

REPROGRAMMING SOUNDS OF LEARNING

Pedagogical Experiments with Critical Making
and Community-Based Ethnography

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Teaching and learning are a series of interpretive acts. From designing a syllabus to enacting classroom exercises, teachers construct the value of education by assigning outcomes of learning to grade values. Students maintain the value of education by performing tasks in order to achieve the goals of classroom activities and assignments. These processes resonate with programmatic acts such as encoding, decoding, and enumerating. In many ways, pedagogical design is very similar to software design. Computational logic pervades much of the thinking familiar to teachers and administrators. For instance, at the curricular level, programming means breaking down the experience of learning into uniform components and then counting, sorting, and grouping these components based on the mission and the objectives of a degree program. At the course level, grading exemplifies a *markup* activity that ranks student work; and *scripting* in-class activities sequences interactions and governs informational flow among the students and the instructor.

Codifying learning leads to the evaluation of the learning outcomes across metric categories that have been standardized. This process of codification interfaces with the myriad modes of learning, from reading and writing to classroom discussion and testing. These standardizing practices rank modalities of learning based on a hierarchy of senses that prioritizes some experiences of learning over others. For example, class participation is typically an embodied experience—including raising hands, voicing an inquiry, exchanging ideas with peers during a class discussion. In evaluation, the metric of “class participation” has lumped these sonic modes of learning into a single category. This category is often ascribed with little weight relative to other categories based in silent modes of learning such as final essays, midterm exams, and reading responses. The ordering of senses results in the privileging of writing and printed text over auditory processes such as listening, speaking, discussing, making, and collective brainstorming.

Given the compulsory silencing of institutional learning, I ask: How would a sounded pedagogy reorganize the communications and information flow in learning? What might be some guiding principles for thinking about a sound-based approach to teaching and learning? How might “sonifying” learning encourage students to explore a personal meaning of learning? Can sounds enable students to encode and decode knowledge reflexively across various contexts of learning? If so, how? Finally, how does a sound-based pedagogical approach foster collaboration and community building? In this chapter, I first offer a critical perspective on industrial models of pedagogical designs and practices that encode sounds (out) of the learning experience. Then I propose a series of experimental approaches that attempt to reprogram sounds back into learning and teaching.

The Code of Silence

Looking at syllabi from the past, I noticed something unusual on the History of Civilizations syllabus for a course offered in 1969 at Occidental College. In a description of the journaling assignment, the instructors state that the journal is “not a place to sound off.”¹ The use of the term “sound off” struck me as a peculiar way to refer to complaints about professors. Sounding off typically involves speaking loudly, an act that comes with a distinctively audible component. The anti-sounding-off restriction on the syllabus poses an unexpected dissonance to the assignment of journal writing. Journal

writing is typically an internal, individualized grappling with intellectual materials. Placing a restriction on a sounded speech act within a quiet, introspective writing exercise seems out of place. How did the instructors of the course imagine the sounds of learning? Are they necessarily associated with unruly classroom behaviors? Did they see the need to exert control over sounds so badly that they had to extend their policy into the sphere of individual journal assignment?

In higher education accepted modes of learning, reading, and writing are traditionally associated with quietude.² Libraries, with quiet floors and individual study carrels, are conventionally designed as spaces of silence. Even processes of learning academic subjects with an aural emphasis like foreign languages and music are contained within and isolated by laboratories equipped with individual stations with headphones. The silencing of learning extends into the course design. Courses in the humanities and humanistic social sciences are programmed by a series of readings and evaluations. Students reflect on their learning by quietly writing a final paper and testing their knowledge in an exam.

Working individually and silently makes students submit to authority. It can also suppress student impulse to question the purpose and modality of education. These classroom designs and course policies are aligned with the industrial mission of training students as good, quiet workers. The quiet worker evokes Paulo Freire's diagnosis of education as a *banking model* that operates as a bureaucracy to maintain order and promote efficiency. In this industrial model, students and factory workers are objects that can be quantified for the purpose of resource and labor management.³ This metrication, the process of turning the human experience of learning into metrics that evaluate student performance, is in place to increase productivity and efficiency. In some instances, metrics are implemented to quantify faculty salary and other resources that go into the delivery of a class. The purpose of metrication, in the capitalist-industrial context, is to drive growth. For teachers this means the imperative to increase course enrollment, and for students the objective is to obtain higher grades in order to compete on the job market postgraduation. The grade-driven incentive for student achievement reinforces the data-driven paradigm of classroom management. The continuity between the data- and grade-driven paradigms flattens the purpose of education by producing an efficient, compliant workforce. It is worth asking what other learning objectives are important besides training students to become productive workers without an inclination to sound off, especially in the current postindustrial economy.

Furthermore, the capitalist-industrial logic of course design can reduce the richness of learning to a binary between sound and silence. In its most simplistic case, it turns the sounds of learning activities on or off, like a switch that allows for silent activities such as writing and reading. In other instances, the industrial logic enforces the transmission of sound in a single direction, with the classic paradigm of a professor lecturing over a crowd of silent note-takers. These programmatic mappings in learning design often privilege silence over sound, writing over speech, reading over discussion, thus reinforcing the instructor's authority over participation and interaction.⁴ What if the experience of learning could resound in a full spectrum between sound and silence, including noise, music, whispers, provocation, recitation, call and response, and other relevant sounding experiences? A reprogramming of learning calls for the rethinking of the role of sounds in learning beyond the dichotomy of sound and silence, ushering in classroom dynamics with sounds and noises that emanate from the bottom up, sideways, and across.

Reprogramming Sounds

Sounds can chart new territories of learning. They can amplify the tacit and reembody a message, a set of instructions, and a corpus of knowledge. They can renew textures of knowledge, bringing into existence interpretations and inquiries of personal and social significance on a journey of learning. A sonic rehabilitation of learning can remodel the mission of education and reconfigure pedagogical relationships. Nuances of sonic modality and mediation are central to the process of acquiring and embodying knowledge. Sonically informed insights can give us ideas for creating engaged learning. Foregrounding sound as a medium and modality of learning, I want to draw attention to how sound dynamically registers at the experiential, ideological, and societal levels.

I advocate for a pedagogy that encodes sounds into the learning scaffold. This act of reprogramming begins with raising sound-first inquiries about teaching and learning so that sound is a central principle and not an afterthought. I employ examples from *Digital Music-Cultures*, a course I designed and taught in spring 2013 while experimenting with digital pedagogy and multimodality with and through sound. Combining principles of ethnomusicology and digital audio production practices, *Digital Music-Cultures* is an entry-level music course for nonmajors.⁵ To create a new pedagogical

schema, I identified points of intervention that could be meaningfully sonified through rescripting class discussion, workshops, homework assignments, and final projects.

It is worth noting that even though the subject matter of this course is music, a sonic medium, most nonperformance-based music courses, such as music history and ethnomusicology, are taught in ways that are confining sonically. For instance, the listening portion in a similar course usually manifests either as a take-home assignment for individual students to engage with privately, in their own time, or as a drop-of-the-needle identification portion of a written test. A pedagogical goal of this course is to reorganize the experience of sounding and listening so that they are central to learning. Like a choir rehearsal, evoking sonically driven learning practices such as a call-and-response ideation, a performative demonstration of feedback, is treated as foundational to the course experience.

I propose three principles to reprogram the way sounds are learned: remediation, reflexivity, and resonance. These principles are derived from a series of pedagogical experiments I conducted while teaching undergraduates from 2006 to 2013. All three interrelated and non-mutually exclusive principles demonstrate the intersecting possibilities between sound as a medium and the digital as a modality. In what follows, I elaborate on each of the enlisted principles with actual examples drawn from the course.

Remediation

Remediation refers to the transfer of content in one medium context to another.⁶ Remediation occurs as content becomes represented across media contexts: for example, a film adaptation of a theater production, song lyrics derived from poetry, or photographs of paintings. The concept can also be exemplified when content transfer happens across format types: from analog to digital, from radio show to podcasts, from vinyl recordings to MP3 files.⁷ Further, in digital humanities, remediation can be theorized from the perspective of materiality. Challenging assertions of digital immateriality, digital humanities scholars have conceptualized the materiality of digital objects and processes.⁸ Digital affordances, they contend, enable knowledge transformations. Through these transformations, objects of knowledge are reiterated and reembodied across modalities and media types.⁹ The technological possibilities for visualizing textual and sonic materials have enabled humanities scholars to manipulate the form and format of cultural content, renewing the analytical context for discovery and insights.¹⁰

The pedagogical value of remediation or remateriality becomes evident when students wrestle with often-challenging intellectual processes across media contexts. Reading, discussing, making, listening, sharing, rereading, remaking, relistening, rewriting—these tasks are iterative remediations of concepts and theories from a course. Each time students remediate course materials, from reading to writing to discussing, they develop a deeper and more nuanced relationship to those concepts.

Sonification—the act of turning nonsonic materials into sounds—is well poised as a remediation practice for providing a new sensory context for students to grapple with knowledge. It is a space for students to articulate relational knowledge: for instance, exploring the relationship between their own argumentative positions and sources of scholarly materials. Sonic remediation of student writing, in particular, can help students hone their arguments with respect to other scholarly voices and content. In my writing-oriented courses, I always structure an assignment asking students to record themselves reading a previously composed essay of their own.¹¹ This assignment allows students to explore their authorial voice within the sensory domain, enriching the experience of writing. I often see students attempting to sound “scholarly” in their writing. This exercise disabuses them of notions of having to sound scholarly. Instead of sounding like a generic scholar (whatever that means in their heads), I want them to take control, to reclaim their own voices, and to embody argumentative writing on their own terms. Sounds can also afford us opportunities to remediate scholarly concepts, which are almost always transmitted as printed text. In this instance, sonification can be an interpretive exercise that provokes recontextualizations of meanings and knowledge. Using sounds to rematerialize scholarly information, students can gain multiple access points, including those that are embodied, sensory, and potentially affective, to enter into the scholarly conversation and develop a personally meaningful relationship with the object of intellectual inquiry.

To experiment with sonic remediation, I ask students to sonify their responses to their reading of a theoretical text and their viewing experiences of a documentary film. For a unit on chip music, I created an in-class exercise for students to explore concepts of music and noise described in an article excerpted from Jacques Attali’s book *Noise: The Political Economy of Music* and in Paul Owens’s documentary film about chip music, *Blip Festival: Reformat the Planet*. First, students work in groups to populate a shared Google doc with quotations from the Attali article that address concepts related to music and noise. I scaffold this class activity by providing prompts to evoke possible

theoretical engagements.¹² Students populate a list of Attali quotations and annotate each quotation with an analysis of how the quotation offers a perspective on chip music as depicted in the film.¹³ In the following class meeting, held in a media production workshop, students acquire the basic techniques of chip music production, learning to compose music in *Little Sound DJ*, a beat-making Game Boy game simulator. For their take-home assignment, students compose a chip music piece as an audio meditation on theories related to music and noise, while referring to the peer-sourced list of quotations from the previous class meeting. In a reflective blog post describing their results, students discuss how their composition does one of the following:

- exemplifies or reflects an ideology (related to music, society, consumption, or technology) expressed by Attali,
- demonstrates a technological or musical concept discussed by Attali,
- contradicts how music (or noise) is defined by Attali, or
- explains or encapsulates the meaning of music (or noise).

This creative assignment encourages students to engage with sonic argumentation—to demonstrate, extend, or undermine concepts in the reading—through audio production techniques.¹⁴ This multipart lesson ends up creating a space for students to speculate on the triangulation between three learning components of the unit: high theory authored by a canonical scholar, the grassroots community of chip music practitioners depicted in the film, and the practice of chip music audio production. Sound, in this example, serves as a remediating agent that grapples with the relationship between two texts in two different media, across two interpretive domains.

Possible intellectual productivity comes to life when the students' deployment of an aesthetic decision via audio software techniques interlocks with their explorations with scholarly concepts. Something *clicks*—an experience we have all had in learning—and the fruits of interpretive efforts emerge. Interestingly, “clicking” is an auditory expression of a productive moment of intellectual grasping or knowledge discovery. A famous example of this is Archimedes's exclamation, “Eureka!” I wonder if the recovery of the sonic dimension in learning could spur meaningful “eureka” moments.

This assignment encourages students to engage with a deformative path to imagine new and creative forms of scholarship that can be “forbidden . . . either irresponsible or damaging to critical seriousness.”¹⁵ Linking

deformative reading with digital making, Mark Sample champions a making approach rooted in breaking things as a predominate mode of making new cultural objects.¹⁶ A deformative making project refuses a “revitalized perspective,” deliberately not treating a new text or artifact as a derivative or secondary object in relation to the original text.¹⁷ This lesson on noise and chip music itself is modeled after the deformative, hack-based praxis rooted in the chip music and related noise music communities. Parsing and breaking Attali’s text into creative scraps with the potential to germinate new systems, I believe, is a deformative act. Multiple students play with an Attali quote that articulates a historical homology between music and technology: “Every code of music is rooted in the ideologies and technologies of its age, and at the same time produces them.”¹⁸ Some students find a way to engage with Attali’s writing in their chip music composition. A few students recompose popular tunes from their own time (c. 2013) using sounds produced by the Game Boy chip music emulator to reflect the idea of age, to show the temporal disparity between the technological relic of the Game Boy and the tech of their present. Other students use even more abstract parts of Attali’s text to sonify the idea of noise as a means of materializing the relationship between music and human perceptions of chaos and noise. Deformative approaches to pedagogy have even greater implications for rethinking the role of creative assignments in humanities courses. I will reflect on this corollary in the final section of this chapter.

Reflexivity

Reflexivity describes a system that refers back to itself. It models the feedback loop and embodies circularity. The concept of reflexivity has implications in music studies, digital humanities, and media studies.¹⁹ I offer ethnomusicological insights on the relationship between reflexivity and the transmission of knowledge. In particular, I draw on Tomie Hahn’s work that looks at the transmission process of embodied knowledge in *nihon buyo*, Japanese traditional dance. She declares the critical positionality of her personal experience in her monograph: “Because *nihon buyo* has been a part of my life since childhood, it was a clear candidate for a case study on the transmission of cultural knowledge. I decided to write this ethnography with a reflexive voice because my body physically experiences and informs my perspective on transmission, and ignoring this voice would have been disingenuous.”²⁰ According to Hahn, the process of knowledge transmission is central to ethnography. The researcher’s reflexive forms of knowl-

edge can be critical to grasping cultural knowledge through wrestling with the tension between self and other and through embodied, tacit ways of knowing.

Learning is, in many ways, an exercise of research, a process of knowledge discovery and transmission. The reflexive framework offers a fruitful perspective regarding the purpose of learning. In institutional learning students often take for granted the value of learning. The product orientation of learning becomes a barrier for students to realize the transformation potentials of knowledge. Learning something for oneself begins with the realization that the process of knowledge acquisition can be personalized. Learning can be a process of self-becoming, and knowledge acquisition is not an end goal but a process that can be meaningful in itself. Self-knowledge, as Hahn reminds us, can be a “resource within research.”²¹ How can we reposition learning as something that’s more process-oriented? How can we rearticulate the purpose of learning? My answer to this question is a reflexive ethnographic final project that echoes Hahn’s ethnographic research framework.

Dubbed *Sounds of Learning*, the culminating class assignment is a community project that pairs college students with sixth graders from a nearby elementary school to coproduce a three-minute audio piece that documents and comments on youths’ experiences of school and learning. Based on a reflexive logic of learning about learning, this project extends classroom learning beyond the confines of a college to embrace broader notions of cultural and embodied learning in the community. Using a community-based, ethnographic paradigm, this project recodes learning by embedding students in sounded communities. The project explores, activates, and records the sonic dimensions of acquiring, mastering, and embodying new information, cultural knowledge (pop culture, heritage, language), social norms, and values (identity, status). I introduce this collaborative provocation using the text below:

We deliberately sound the process of learning by asking our sixth-grade collaborators to capture sounds that are meaningful to them. These might include the sounds of school activities and environment, conversations with peers and adults, interactions with popular culture and media, sounds of home and neighborhood, and counting. In the most literal sense, the sounds of your interview with students of Annandale Elementary—what and how they articulate as their answers to your prompt questions—are sounds of learning in themselves. They reflect

how the sixth graders come into awareness of their surroundings. As importantly, these sounds teach you, the ethnographer, aspects of the social and aesthetic world that they live in.²²

During this collaboration, students enrolled in my course synthesize appropriate techniques and ethics of ethnographic research and field recording that they acquired throughout the semester. Through a hands-on engagement, students reinforce their knowledge of another course premise, ethnography as an embedded and sounded practice.

In this model, recording is considered as a reflexive research practice that extends the technique and purpose of close listening. “Recording is itself a form of research. Of course it is important for a documentary producer to capture good sound, but getting any kind of recording is also a mode of exploration and investigation in its own right.”²³ In this project, I challenge students to think beyond the expected content, form, and standards of recording quality of “sounds of learning.” Students should continue to reexamine their definition of learning, throughout the progression of the final project by working through destabilized notions of aesthetic worthiness and acceptability while interpreting field recordings.

The digital making component of the Sounds of Learning class project evokes some of the technique that others refer to as critical making. Matthew Ratto ties critical making to the mission of synthesizing theoretical and pragmatic modes of engagement with knowledge that is often held separate: “Critical thinking, typically understood as conceptually and linguistically based,” joins with “physical ‘making,’ goal-based material work.”²⁴ Deconstructing the recipe of how digital sound media are made via an act of remaking can afford students of both Occidental College and the partnered elementary school to gain an access to personal and reflexive meanings of technology in their everyday lives. This kind of critical making can also help recontextualize students’ relationship to technology, enabling them to question their expected role as technology consumers and end-users and engage with technology beyond the black box.²⁵

Resonance

Sounding and listening are both relational and social activities. They bridge social rifts and forge new connections. They generate resonance and social openness.²⁶ In a learning context, sounds can facilitate and encourage the exchange of information between multiple sounding agents, for exam-

ple, between the instructor and students, between students and their classmates, between students and their extended peer and family networks. In this resonance framework, sounds can activate participatory learning and empower individuals with a voice to express themselves. Allowance of sounds and voices can flatten the social hierarchy of the agents in a classroom. Jesse Stommel shares Freire's vision of "problem-posing education" as an alternative to the industrial banking model of education: "A classroom or learning environment becomes a space for asking questions—a space of cognition not information. Vertical (or hierarchical) relationships give way to more playful ones, in which students and teachers co-author together the parameters for their individual and collective learning."²⁷

Sounds can be a medium of power for individuals to assert their agency. They enable the activation and emanation of voices, an articulation of difference and plurality that can be heard by the participants and their audiences. A vocal enactment of plurality can undermine conventional classroom dynamics and redefine the purpose of education. In what follows, I will draw from the Sounds of Learning final project to illustrate the affordance of sound as a catalyst to reorganize the traditional flow of communications related to teaching and learning.

Occidental College straddles two neighborhoods in northeast Los Angeles: Eagle Rock and Highland Park. Though with slightly different social histories, both neighborhoods have been changing dramatically in terms of land and property values. The community discussion about gentrification and displacement (the dispelling of low-income renter-residents in the previously predominately Latino neighborhoods) has become more polemical. My course took place in 2013, a time when signs began to show of neighborhood changes related to real estate and property development. From informal conversations with community organizers and the director of the college's Center for Community-Based Learning, I gathered that a partnership with the local elementary school would not be seen as politically neutral. Occidental College students have traditionally been uninvolved in activities in the broader community. This "campus bubble" and the social divide between the Occidental campus and the broader community is perceived as a reality by the community and, to an extent, by the students and faculty themselves.

With a goal to create a shared experience based in colearning, I set out to intervene in the existing power relations between student participants at Occidental College and at Annandale Elementary School. In addition to

the age disparity between the college students and the sixth graders, other social factors mediate the ideas of difference between these two groups. Occidental is private liberal arts college. My students were mostly white, whereas the Annandale sixth graders were majority Latinx. While a subset of the Occidental students are first-generation college students, some of whom are on financial aid, the majority of the student body consists of students who come from socioeconomically privileged backgrounds. This project provided a platform for my students to conduct community-based research with an emphasis on researching *with* a community—in other words, observing and participating in the social lives of their sixth-grade research partners.

This collective research model privileges the experiences and the epistemology of the sixth graders, thus making the Occidental students assume the role of learners of the social world in which their elementary-school partners live. Sound is foregrounded as the medium of this unique learning journey while engaging with processes of knowledge transmission, speculation, and argumentation. At the kickoff meeting, which takes place at the elementary school, college students meet and teach their sixth-grade partners the basic techniques of field recording. Sixth-grade students then take recorders home with them with the goal of gathering recordings related to learning. During the field-recording period, a workshop is set up for sixth graders to share their recordings with their college student partners. They work together to coexplore the meanings of the recordings; based on the outcome of this exercise, they may re-strategize their field-recording plans. Then college students meet during their class time to review ethical principles of ethnography and develop a set of interview guidelines.²⁸ In a final digital-making workshop, college and sixth-grade students discuss, negotiate, and eventually come to an agreement on a shared production vision and plans for the final composition. Following their agreed plan, college students spend the final two weeks of the semester listening closely to the recorded materials while mixing and editing recordings into a composition. A listening party takes place inside the elementary school's multipurpose auditorium at the end of the semester, bringing together sixth-grade students, teachers, family, college students, and administrative support staff of Annandale Elementary and the community-based learning center at Occidental College. Based on the feedback gathered at the listening party, college students revise the mixes and submit their final version along with a thousand-word blog post reflecting on the project in light of concepts

learned throughout the semester. The final mixes of the compositions are distributed back to the elementary school students with cover art and liner notes created by one of the Occidental students.²⁹

For my students, the success of their projects is highly dependent on the recording products collected by their sixth-grade partners. Throughout my students' workshop, I hear students complain that their sixth-grade partners did not collect adequate recordings. One student claims that his sixth-grade partner's recordings of neighborhood streets are meaningless in the context of the assignment. I take these complaints as opportunities to push my students to listen harder and think critically about their own assumptions about these sounds and their partners. I pose questions such as: Do you hear sounds like this in the neighborhood where you grew up? If not, how do you make sense of this difference given what you know about their social world? These inquiries ultimately lead students to interrogate their processes of knowledge production and assumption formation within the project's social specifics and to expand what they consider to be legitimate knowledge.

Throughout the project, my students are encouraged to form a dialectical relationship with the sound of learning accomplished by, to use a metaphor introduced earlier in this chapter, the encoding and decoding of culture. The acts of encoding and decoding cultural materials—specifically, making, remixing, and composing with field recordings—constitute the core of learning, the acquisition of knowledge. Through recording, mixing, and composing, students listen thoughtfully and kinesthetically across barriers of education, class, age, gender, and ethnicity. And the bidirectional relationship with research associates achieved through shared listening and making help cultivate empathy, a desirable quality that emerges from reflections of ethics and critical positionality in ethnographic research. One student articulates this outcome in his final reflection essay:

My partner, Anthony, was very humble at first, but later opened up to me during his visit to Occidental College. I did not understand the world he inhabits as he described when we first met. While he did his best to paint a picture in my head, I could not get a clear image without a sonic environment. It was only after I listened to his recordings that I was able to visualize a picture of his world. . . . I originally thought of a school setting, but through my interview with Anthony, I began to think with a wider perspective and settled on focusing on his life at home. Learning is not only math and science, but also life lessons and growing up. An-

thony shared with me that his parents were divorced and he did not really have a place where he can call a permanent residence. Home is a place of learning because that is where someone grows up and develops personality. Even though Anthony lives in different homes at different times with mom and dad, he felt that both places were his home. I was really grateful that Anthony was able to open up to me and talk about his family. I made a lot of effort to engage in casual conversation to make him feel comfortable to just talk story and not pay attention to the recorder. In the end, he told me jokes about pranks that his family members did to each other. He even shared that his dream is to become a Marine just like all the men in his family. He asked me questions about what college life is like and other things that are not particularly relevant to the music project. Just like John and Alan Lomax were able to do field recordings across the country by engaging in conversation and being friendly, I was able to do the same. The Annadale project taught me a lot more than I expected about myself and opened my ears to perceive a sonic world.³⁰

This student's reflective excerpt begins with an assumption that learning takes place in school, but through conversations with his partner Anthony and listening to his partner's recordings, he is able to theorize more broadly about the meaning of social learning in his partner's life. The student author (who self identifies as idanxfi) is an international student from Japan. Listening to his Latino research partner across the ethnic and national lines ended up being a lesson about his own ethnic difference in relation to his partner. His reference to John and Alan Lomax hints at a deeper interrogation of the racialized relationship and economics of exchange between those who recorded (white, Anglo-Saxon) and those who were recorded (nonwhite, often black and Hispanic) in the history of folklore, an ongoing conversation throughout the term of the course. This excerpt illustrates that collective listening and digital making constitute a shared communication platform. Using this platform, student researchers may iterate the research cycle of listening to, speculating about, and making the meaning of sound while interviewing their research partners until they attain a deepened understanding of culture. This model exemplifies the multimodality of learning by sonifying the often inaudible learning spaces and processes by breaking down place-based conventions of learning, in this case school vs. home.

Colistening and comaking also question the subject-object binary that dates back to historical colonial research practices. "The Annadale project taught me a lot more than I expected about myself and opened my ears to

perceive a sonic world.”³¹ This has particular ramifications for Occidental College, a small, elite liberal arts college tucked in a semiurban pocket of metropolitan Los Angeles. The collaborative media-making process fulfills the mission of learning as a form of community engagement. Reducing the distance between subject and object of ethnographic research, critical and collaborative making encourages listening with empathy and communicating across differences.

For the sixth graders, this project serves as more than a technical arts workshop. It is intended to spark reflection and empowerment on a newfound understanding of their everyday cultural and environmental soundscapes, a discovery about how sounded environments have shaped their sense of place and self throughout their elementary school years. To this point about self-realization, CJ’s project with Jazmine comes to mind. Over initial interactions, CJ learns that Jazmine is shy and uncomfortable with recording her voice. Turning this obstacle into an opportunity to forge a connection, CJ repositions his role relative to his research partner. He recounts this moment in his reflective blog post: “This project became more than just a way to get a good grade in the class, but rather an opportunity to shape someone’s life. My role moved away from mentor, interviewer, and ethnographer into cheerleader, motivator, and empowerer.”³² Jazmine is an aspiring singer but refuses to sing in the presence of CJ. As a response, CJ, who is also a singer, encourages Jazmine to explore her voice through self-recording and operate the recorder herself as a means to take control of her own recording. CJ writes in his reflection paper:

She became a different person, and the recorder transformed from merely a sound-capturing tool to a microphone of a singer. The recorder became a tool of transformation, a means to express identity, a source of empowerment. Though I had to walk away, once she was in her zen moment and alone, she allowed her soul to sing. The transformation was amazing.³³

CJ is highly aware of the representational politics of field recording and sampling, a topic of class discussions earlier in the semester. His relinquishing the control over recording shifts the typical dynamic of an ethnographic relationship. Teaching while empowering his partner Jazmine to record her own voice ends up bolstering the research associate’s courage to take agency in staking a claim to her own representation.

In this instance, recording acts as an empowerment tool that disrupts the colonial and historical object-based thinking about documenting the cultural other. Recording has been reclaimed by the ethnographic subject, who

not only uses technology to amplify her own voice but also acquires a transformed perspective about herself and her relationship to her own voice and embodied subjectivity. As a resonating medium between the ethnographic researcher and the research associate, sound enables the transformation of the directionality of knowledge transmission. It offers opportunities for both CJ and Jazmine to experience reflexive learning on their own terms and to play an active role in knowledge creation.

After Jazmine comes back with her recordings, she and CJ agree to make a “cool remix.” With this self-critical awareness, CJ creates an audio narrative entitled “Blooming Flower.” Interweaving the story with Jazmine’s recordings of her own vocal explorations, CJ experiments with audio storytelling techniques that portray his partner’s “finding identity and power.”³⁴ The process and product of CJ’s audio work support the affective and intellectual growth of his research partner’s life. His thoughtfulness leads him to nuance a multimodal argumentation style that simultaneously critiques the medium and politics of ethnographic representation and builds a relationship with his research partner.

Final Reflection

Sounds are messy. They travel, leak, and cut through barriers that are ostensibly prohibitive. This makes sound a great medium to discover new paths for intellectual inquiry and practice. Sounds create opportunities to interrupt the existing logics in institutional learning. When I teach, I use these creative opportunities to reencode the meaning of learning. The most successful instances all call into question the product-focused approaches to learning. These teaching experiments require that I partially relinquish my control as an instructor to define what’s meaningful in students’ learning experience. Letting go of this impulse to script the purpose of learning means giving students their agency to determine their own relationships to their objects of inquiry. It also means that instead of meaning and purpose, I provide them with a scaffold to explore the web of scholarly knowledge with their own voices and positions. Reprogramming pedagogy in many ways means unprogramming some of the top-down command by the instructor. A thoughtful rescripting brings to life a dynamic learning algorithm that is reflexive, process-oriented, and participatory with student input.

Much of my effort in redesigning teaching goes into reconfiguring the relationship between reading and writing, listening and reflecting. “Break-

ing” text-based traditions in learning and using the deformative metaphor through sonifying can not only destabilize textual knowledge but also lead to unexpected learning results.³⁵ These sonifying interventions enable students to play and experiment with intellectual materials within a new space, one in which creativity plays a central role in learning. My intention for students to construct a sounded document—a new sonic artifact that by its existence has little respect for the original scholarly text—is to disrupt the fun vs. serious binary in university learning. Often in a university classroom, creative projects are relegated to a secondary place, treated as “fun” for extra credit or as a supplement to a more serious assignment like an essay. To a large extent the rigor of evaluating these creative works is underdeveloped in humanities courses because of the myth that creative work has no relationship with “serious” scholarly materials. My current articulation of the relevance of creative projects in humanities coursework hopefully contributes to the larger pedagogical conversation about the educational value in having students engage with multiple modalities of learning as they grapple with sometimes complex and esoteric scholarly content.

A few of these teaching experiments fail, however, as experiments do sometimes. One reason is students’ lack of openness to try something different. Some students in my class had a hard time thinking outside the box. Many of them are first-year college students with habits of learning established in secondary education. Only a subset of students understood, for instance, the instructions provided for the chip music assignment and found a way to link their reading responses to their compositions. This could be because students are not used to engaging in creative practice in humanities courses and are often discouraged from tempering learning with subjective meanings such as affect, stories, and creativity. Within the course context, it may be useful to demonstrate this assignment by eliciting examples that explicate a link between intellectual and creative grappling with text, and doing so within the context of a transparent grading rubric.

While it is easy to assume that some students are “naturally” more creative than others, we as instructors need to be mindful of the effects of nontraditional learning engagements on students of various backgrounds. I notice that students from less privileged backgrounds are less likely to engage with learning experiments. What seems to me like a healthy challenge could end up being perceived as a stigma or being negatively tied to previous experiences of learning. Teaching interventions should be implemented with sensitivity toward the cultural and social needs of students and responsiveness toward the history of learning that each student brings.

Last, I want to return to CJ's story to offer a final comment. In his final reflection essay, CJ notes a resounding contradiction between the evaluative and transformative aspects of learning. "This project became more than just a way to get a good grade in the class, but rather an opportunity to shape someone's life."³⁶ How do we reconcile between the holistic mission of sounded learning and the competition-ridden assessment requirement of education?

Earlier in the chapter I spoke of how grading and evaluation rank the performance of student work. It seems strange that I critiqued this pedagogical practice but then do not examine it in the rest of the essay. While students and instructors may experiment with the meaning, media, and modality of learning within the context of a course, most of these practices are still fixed within the larger grade-oriented gridlock. While I apply the concept of resonance to reorganize the communication flow between student researchers and their ethnographic research associates, my relationship with my students remains status quo. I offer workshops and invite guest speakers into the course, but ultimately I still run the show. It is my course and I am still the authority as the instructor. What a conundrum. If given the opportunity, I would extend my reprogramming efforts into the realm of evaluation by considering alternatives such as a "contract grading" policy to offset the compulsory "transformation of a complicated, nuanced, and (ideally) supportive relationship into a mercenary transaction."³⁷

The experiments that I have evoked in this chapter give fodder for thought. I hope to inspire further experimentation and iterations that come with the sharing of practices and the embracing of failures. Efforts to reprogram teaching and learning should happen at both the course and curricular levels. For a sustained impact, let us continue to imagine thoughtful and creative efforts that sonify acts of knowing and resonate transformative visions of learning.

NOTES

- 1 Winter et al., *History of Civilizations*.
- 2 The sonic politics of learning have class implications in earlier formations of social stratifications in the United States. Citing Cavicchi, Silva-Ford links the hierarchies of sound and silence encoded in learning to nineteenth-century ideologies that define class distinctions. Quiet behaviors of learning and read-

ing exemplify middle-class respectability. The quietude of reading and listening elevates the status of genteel people, setting them apart from the noisy pastimes of slaves, immigrants, and workers. Cavicchi, *Listening and Longing*, 52, cited by Silva-Ford, “Sounds of Writing and Learning.”

- 3 See Freire, *Pedagogy of the Oppressed*. For a historical overview of the industrial model of education and the critical potentials of digital pedagogy, see Davidson, *Now You See It*.
- 4 Emphasis on writing, Silva-Ford notes, stems from the association of writing with linear organization of ideas and print-based media (“Sounds of Writing and Learning”). Within this design paradigm, forms of student work that are not print-based, linear expressions of arguments—including audiovisual, interactive, networked, and born-digital—are undervalued. It is worth noting that this perspective reduces the interactive potentials of textual engagements.
- 5 The Digital Music-Cultures course provides a critical and hands-on environment for students to explore how current music as “digital vernacular” differs from its analog, historical counterparts; how contemporary digital music-cultures create new meanings of place and identity in the increasingly globalized world; and how social, media, and technological institutions organize twenty-first-century music participation at the dispersed, grassroots level. To learn more about the course, see the course site introduction at <http://cdlrsandbox.org/wordpress/digitalmusiccultures>.
- 6 Bolter and Grusin, *Remediation*.
- 7 Novak, “Sublime Frequencies.”
- 8 Drucker, “Performative Materiality”; Kirschenbam, *Mechanisms*.
- 9 Hsu, “Digital Ethnography”; McPherson, “Introduction: Media Studies”; Nowvskie, “Resistance in Materials.”
- 10 On textual materials, see Moretti, *Graphs, Maps, Trees*; on sonic materials, see Clement et al., “Sounding for Meaning.”
- 11 I have discussed the instructions and outcomes of this sounded writing assignment in a blog post. See <http://cdlrsandbox.org/wordpress/racegenderpop/student-projects/musical-autobiography> (accessed January 14, 2018).
- 12 The prompts in the assignment include: Which quotations in the Attali reading “exemplify or reflect an ideology (related to music, society, consumption, or technology) expressed by participants of the chip music community; demonstrate a technological or musical practice seen in the chip music community; differ from or challenge how music (or noise) is understood in the chip music community; explain or encapsulate the meaning of chip music in a particular social context?”
- 13 The instructions for this in-class activity, along with the shared document created by the students, are posted on the course site: see <http://cdlrsandbox.org/wordpress/digitalmusiccultures/lessons/week-7> (accessed January 14, 2018).
- 14 The actual instructions used for this assignment are posted on the course

site: see <http://cdlrsandbox.org/wordpress/digitalmusiccultures/assignments/assignment-7> (accessed January 14, 2018).

- 15 Gann and Samuels, "Deformance and Interpretation."
- 16 Sample, "Notes toward a Deformed Humanities."
- 17 Sample, "Notes toward a Deformed Humanities."
- 18 Attali, "Noise," 37, in Sterne, *Sound Studies Reader*.
- 19 Wayne Marshall's work claiming mashup as a pedagogical practice touches on the idea of media production as a reflexive pedagogy. Marshall's formulation seems promising because it positions digital (music) making as a critical practice, one that highlights a self-conscious engagement with the makers' personal reactions to the musical components of a mashup composition. Unfortunately Marshall's theorization falls short on its implications for classroom learning. His definition of pedagogy assumes a broad understanding of pedagogy as a transmission of knowledge between performers and audience and by extension, between scholars. See Marshall, "Mashup Poetics."

I should note that reflexivity has surfaced in digital humanities as a part of the theorization of virtuality and human-machine interface (Hayles, *How We Became Posthuman* and *Electronic Literature*) as well as cultural rhetorics (Sano-Franchini, "Cultural Rhetorics"). A related concept of recursivity has been tied to the discourse about the public within the open-source community in anthropological literature (Kelty, *Two Bits*). These references, however, do not engage with the process of knowledge transmission in the social and sensory realms in ways that would be productive for a discussion about sound pedagogy.

- 20 Hahn, *Sensational Knowledge*, 10.
- 21 Hahn, *Sensational Knowledge*, 10.
- 22 Hsu, "Digital Ethnography."
- 23 Makagon and Neuman, *Recording Culture*, 15.
- 24 Ratto, "Critical Making," 253.
- 25 Balsamo, "Videos and Frameworks," cited in Sayers, "Tinker-Centric Pedagogy," 282; Latour, *Pandora's Hope*.
- 26 Low and Sonntag, "Towards a Pedagogy of Listening."
- 27 Stommel, "Critical Pedagogy."
- 28 The prompt for this workshop session is posted on the course site: see <http://cdlrsandbox.org/wordpress/digitalmusiccultures/workshops/annandale-workshop-1> (accessed January 14, 2018).
- 29 The reflective assignment prompt is posted on the course site: see <http://cdlrsandbox.org/wordpress/digitalmusiccultures/assignments/final-project-assignment> (accessed January 14, 2018).
- 30 idanxfi, "Sounds of Learning."
- 31 idanxfi, "Sounds of Learning."
- 32 Siege, "Blooming Flowers."
- 33 Siege, "Blooming Flowers."

- 34 Siege, "Blooming Flowers."
35 Sample, "Notes toward a Deformed Humanities."
36 Siege, "Blooming Flowers."
37 Posner, Selfies, Snapchat, and Cyberbullies. Posner states the rationale for her contract grading policy on her course website. See <http://miriamposner.com/dh15ow15/contract-grading> (accessed January 14, 2018). For more on contract grading, see Danielewicz and Elbow, "Unilateral Grading Contract."
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