Sounding the Garden, Voicing a Problem: Mobilizing Critical Literacy through Personal Digital Inquiry with Young Children

Leveraging personal digital inquiry (PDI) as critical literacy, this article describes the affordances of mobilizing sound as a form of composing change with young learners.

“It started with a question,” Theo (all names are pseudonyms) detailed to me in a 1:1 interview in the Spring of 2017. “My dad was listening to NPR one day when he took me to school. He knows I love birds, so we turned it up.”

With hair as yellow as straw and glasses that slide down his nose, Theo is easy to spot in Ms. O’Toole’s multiage classroom. As a young seven, his frame is smaller than other first graders, “but his soul,” according to Ms. O’Toole, “is as old as dirt.”

“You know Genius Hour,” Theo continued, “well, I decided I wanted to follow the birds. The birds on NPR. The birds that don’t come as quick to Michigan anymore because of climate change.” As Theo detailed the early happenings of his personal digital inquiry (PDI) project, he walked me through the school’s children’s garden.

“I guess my solution isn’t my writing, but the garden is? It talks now. Because of what I made.” Theo giggled in thinking about the garden speaking. In reality, however, Theo was right. The garden, both visually and aurally, now communicated the urgency of climate change to area residents and community members. Stitched to giant oak trees with twine were detailed illustrations of birds. Next to each bird, a QR code signaled for readers to tap into the layer of sonic-augmented reality (see Fig. 1). The sounds of each bird’s call rung out as onlookers clicked their way through the sound art installation. Theo’s voice provided closing narration. Speaking from a scripted voiceover, he informed listeners of the birds’ range and diet while highlighting possible solutions to stopping climate change in Michigan. In short, Theo engaged Michigan residents and local...
community members in recognizing a problem and participating in environmental action.

With an ear toward sound and personal digital inquiry [PDI] (Coiro, Castek, & Quinn, 2016), this piece adds to the growing accounts of critical literacy pedagogy in practice (Brownell, 2018; Comber & Nixon, 2004; Kuby, 2013; Vasquez, 2004). Zeroing in on a multiage classroom in Detroit, Michigan, it focuses on a first-grade student’s sonic art project. Constructed as a response to climate change, this project exemplifies how key events and problem-solving practices in the PDI sequence transformed into critical literacy. Personal digital inquiry cultivated new dispositions for writing action and working against environmental injustice. PDI provided students with opportunities to connect personal interests with civic action.

**Personal Digital Inquiry (PDI)**

Developed by Coiro and colleagues (Coiro, Castek, & Quinn, 2016; Coiro, Kiili, & Castek, 2017), personal digital inquiry (PDI) is an inquiry-based learning framework that integrates personal inquiry with online research and digital participation. Located at the axes of multiliteracies (New London Group, 1996), new literacies (Gee, 1991; Street, 1995), and connected learning (Ito et al., 2013), PDI follows a set of four problem-solving practices: 1) wonder and discover; 2) collaborate and discuss; 3) create and take action; and 4) analyze and reflect. PDI, in short, “engages teachers and students in opportunities for collaborative discussion and reflection that lead to knowledge building, knowledge expression, and personal action” (Coiro, Dobler, & Pelekis, forthcoming). As a scaffolded framework for teaching and learning, PDI cultivates children’s participation, deliberation, and action through online inquiry and digital delivery.

**Envisioning PDI as Critical Literacy**

In Ms. O’Toole’s classroom, PDI was leveraged as a form of critical literacy. A theoretical stance that works toward designing a more critically informed and just world, critical literacy is a project of “understanding the relationship between texts, meaning-making, and power to undertake transformative social action that contributes to the achievement of a more equitable social order” (Janks & Vasquez, 2011, p. 1). Critical literacy is not, however, solely an orientation of teaching; it is also a way of being, knowing, and being known in the world. As Freire and Machedo (1987) noted, reading the word is simultaneously a project of reading the world. Our understanding of any text—inclusive of digital ones—is mediated by our histories of participation, multifaceted identities, and power.

With young children, critical literacy has often oriented teachers toward helping students see the social world as a text that can be read and deconstructed. For example, Vasquez and Felderman (2013) encouraged their students to become active citizens by constructing counter-narratives through reports, podcasts, and poems. Similarly, others have documented students using critical social practices.
to compose their identities as social activists and challenge the status quo (Campano, Ghiso, & Sanchez, 2013; Leland & Harste, 2000; Pandya, Padilao, & Kim, 2015). Taken together, these practices comprise the task of critical literacy, which, for young learners, is not to deconstruct power writ large but to explore how power shapes identities, practices, and the larger sociopolitical systems in which they live. Cultivating critical literacy with young children examines how text analysis, design, and production can lead to social transformation (Luke, 2012).

In examining personal digital inquiry as critical literacy, I highlight how the four problem-solving practices in the PDI framework were adapted by Ms. O’Toole to mobilize her students to take on the role of critical problem solvers. This adapted sequence of inquiry included: 1) defining an important question and developing a critical stance; 2) shaping inquiry through problem solving; 3) designing for equity by advocating for change; and 4) building community through communicating ideas with others (see Fig. 2). Ultimately a project in persuasion, students developed a critical stance through examining how mode—the means by which they communicated their message—related to their project’s purpose, imagined audience, and desired social change. Put another way, PDI becomes critical when students tackle issues of injustice and design for equity.

**Sounding Out Inquiry:**
**Mobilizing Multiliterate Expression in Critical Literacy**

Students in Ms. O’Toole’s multigra2 classroom used the affordances of digital tools and technology to mobilize critical inquiry. While a number of practices and projects mediated the Genius Hour space, this article takes an “ethnographic ear” (Erlmann, 2004) to listen in on one child’s interest in mobilizing sound as a response to climate change. Sound, as this article argues, is particularly useful for communicating our current experiences with climate change and extinction. By tuning in to a problem, sound amplified new ways of knowing and designing the world.

Although the digital turn in critical literacy studies has prompted us to reconsider the social practices and processes beyond the text (for example, tools, technologies, and bodies), sound has evaded our largely print-based ways of seeing, knowing, and doing inquiry in literacy studies. Sound, as van Leeuwen (1999) contends, “is a mode that centres and situates us, forming and shaping our cultures and our identities in the process” (p. 32). Despite the burgeoning interest in sound and critical literacy studies (see, for example, Wargo, 2017, 2018), there is scant research that highlights how it can be leveraged as a tool for hearing injustice and designing for social change. Sound, as this article advances, is a resource that supports students’ critical capacities for meaning making.

Theo’s PDI project transformed into a sonic piece of critical literacy. As illustrated in the coming pages, it transformed into what LaBelle (2010) calls “sound art.” As both a practice and text type, “sound art . . . harnesses,
describes, analyzes, performs, and interrogates the conditions of sound and the processes by which it operates” (p. 468). In using sound as a modal resource to cultivate change, Theo incited spectators and listeners to build community, hear a problem through acts of charged listening, and design toward possible, not solely preferable, futures.

Method

Zeroing in on Room 210 and Theo

During the 2016–2017 school year, Room 210 was comprised of 19 young children: nine boys and ten girls. As the standalone multiage classroom at Thompson Elementary, the class was composed of nine first graders, five second graders, and five third graders. Ranging in ages from six to nine years old, the makeup of Ms. O’Toole’s classroom mirrored the larger demographics of the school and included 14 White students, two Asian American students, one African American student, one biracial student, and one Latinx student. At Thompson Elementary, 63 percent of the students qualified for free or reduced-price lunch. I focus in this article on a first grade student named Theo, a seven-year-old White boy.

About Theo and PDI in Room 210

Personal digital inquiry in Room 210 was located in the extra-academic space of what Ms. O’Toole called “Genius Hour.” Modeled after Google’s “20 percent work policy,” students spent 20 percent of their work time throughout the week dedicated to an inquiry project that threaded their personal interests with creativity, making, and collaboration. Ms. O’Toole, in contrast to Google’s overarching vision, however, viewed Genius Hour as a site of student enrichment and play.

As others document (see, for example, West & Roberts, 2016), Genius Hour in the multiage classroom was not without scaffolded support from Ms. O’Toole. As a tech-savvy English language arts (ELA) educator, Ms. O’Toole ensured that in the first few weeks of school, children saw digital devices (e.g., iPads, Chromebooks) as tools that supported learning. Setting classroom norms and expectations for digital inquiry, she created anchor charts that listed the various media and resources students could use for research and guided them in their initial searches. Ms. O’Toole even modeled the cycle. Leveraging the affordances of looping with many of her students, older students also helped usher in younger ones through the process.

Throughout the inquiry process, Ms. O’Toole regularly checked in and conferred with students. Whereas other PDI projects constructed during Genius Hour examined the extinction of prehistoric sharks, or the life and history of Anne Frank, I focus here on Theo’s sound art installation for its focus on a global topic of concern, climate change. More specifically, I ask how Theo engaged in PDI as a form of critical literacy. As a “critical instance case” (Davey, 1991)—one in which a situation of unique interest is examined to highlight an instance of broader concern—Theo’s project highlights how PDI became a thread that stitched together the official school curriculum with childhood worlds of civic engagement and critical literacy.

Data Generation

Throughout the study, I acted as a participant observer. I visited the classroom every day for 16 weeks. Visits lasted from three to four hours, primarily during the afternoons during social studies, writer’s workshop, and play-integrated periods such as Genius Hour. I audio-recorded classroom talk and instruction, took pictures of student writing, video-recorded children’s joint production and interaction, and documented classroom life through fieldnotes. I also attended special events with Ms. O’Toole and the children. From after-school talent shows to field trips to the history museum, I attended extra-academic events to construct clearer portraits of the children in the context of the classroom and broader school community. In short, I was interested in knowing how their likes, dislikes, and interests intersected with their emerging lines of personal digital inquiry.

During Genius Hour, I sat and wrote with focal participants, Theo included. As a teacher educator who at one time taught in primary grades settings, I brought to my study a familiarity with the ELA genre expectations and curricular constraints of the district. I also served as a technology “expert” (Ms.
O’Toole’s words, not my own), helping facilitate students’ digital production. At the end of each session, students archived their work on Seesaw, providing Ms. O’Toole with a record that could later be downloaded and shared with children’s caretakers. With consent from parents/guardians, I collected all written work through this mobile application. Theo’s Seesaw archive included 32 documents—largely pictures of birds, but also audio files of bird calls and pictures of written descriptions of birds he scripted offline. These samples contextualized the work produced each day of the larger session. I cross-checked researcher observations, fieldnotes, and student artifacts with participant interviews as well as with the classroom teacher (see Table 1).

Data Analysis
I began my analysis by reading through the extensive archive of Seesaw student work, fieldnotes, interview transcripts, classroom discourse, and student-produced artifacts. In this initial round of analysis, I paid particular attention to Genius Hour as a scene of personal digital inquiry. I coded daily events according to PDI’s four problem-solving practices (wonder and discover, collaborate and discuss, create and take action, analyze and reflect) and indexed student literacy practice. Genius hour became a focal site for me early in analysis, as most students participated with grade-level partners. In reviewing patterns during this initial round of coding, civic action/participation emerged as a unique theme and form of critical literacy practice for Theo, the only first-grade student to work independently.

With Genius Hour as the focus of inquiry, key events were coded for moments in which a) elements of personal digital inquiry served as distinct rhetorical choices for displaying a “critical stance” in the classroom, and b) delivery of inquiry transformed into communicating change. I traced two key verbal resources: a) verbal interactions between peers as they wrote/made with tools and materials and b) 1:1 interviews describing the ideation process and final product. This analytic technique allowed me to see what narratives were being produced and how, on a micro-level, critical literacy was performed and constructed through personal digital inquiry.

Findings
My findings follow the personal digital inquiry cycle. I highlight how Theo, with the assistance of Ms. O’Toole, mobilized PDI as a form of critical literacy. While focused on a single child here, the principles that guided Theo’s inquiry could be flexibly enacted and implemented in other instructional settings and classroom spaces.

Defining an Important Question and Developing a Critical Stance
In defining an important question, Theo engaged in an iterative cycle of inquiry and online research. He also worked to develop a critical stance concerning environmental justice. If we rewind to the opening exchange highlighted at the start of this article, we remember that the impetus for Theo’s Genius Hour project emerged via Michigan Radio. Interrogating why mating patterns for particular birds known to the mid-Michigan range were “out of sync,” Theo worked to define an important question.

Table 1. Data generation

<table>
<thead>
<tr>
<th>Data Form</th>
<th>Data Generation Strategies</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td>‘PDI’-oriented sessions/classroom activities [e.g., genius hour, centers]</td>
<td>12 hours/week</td>
</tr>
<tr>
<td>Observation</td>
<td>Individual/group design events</td>
<td></td>
</tr>
<tr>
<td>Joint-Action</td>
<td>‘PDI’-oriented sessions/activities [e.g., genius hour, centers]</td>
<td>4 hours/week</td>
</tr>
<tr>
<td></td>
<td>Individual/group design events</td>
<td></td>
</tr>
<tr>
<td>Interviews</td>
<td>Conversations with classroom teachers, paraprofessionals, involved school community members</td>
<td>3 hours/total</td>
</tr>
<tr>
<td>Think-aloud</td>
<td>1:1 interviews allowing focal children opportunities to talk about their ‘PDI’ in detail (end of term)</td>
<td>7 hours/total</td>
</tr>
<tr>
<td>Design Protocols</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artifact Collection</td>
<td>Children’s Seesaw digital portfolio/archive, child-produced prototypes, artwork, written worksheets, etc.</td>
<td>123 artifacts/total</td>
</tr>
</tbody>
</table>
At the start of his PDI project, Theo conferred with Ms. O’Toole. “Open up a new page,” Ms. O’Toole instructed. After Theo recounted the small moment and exchange in his father’s car, Ms. O’Toole hushed Theo. “Do you hear what I hear?” she said. “A question!” she quickly announced. On the iPad, I observed a series of questions and statements that served as a template for the Genius Hour PDI project. Constructed by Ms. O’Toole, these included:

- Explain what topic you would like to investigate.
- List some of the things that you already know about the topic; list essential questions for which you want to find answers.
- What steps do you need to take before you start the project?
- Where will you find information (list sources)?

Theo used his index finger to place the cursor under the third statement. After, he whisper-read to his iPad tablet. Siri, Apple’s personal voice assistant, transcribed the questions on his notes page. “What birds left Michigan too soon? Why is this happening? Why is it getting warmer faster? How can we change this?”

Although Theo defined a series of important questions concerning what birds were leaving and how the shift in climate impacted Michigan, he also developed a critical stance. His closing query—“How can we change this?”—signaled the development of becoming a civic actor interested in environmental justice. Rather than taking this question up immediately, Theo first located and analyzed information from a variety of websites and online archives. For example, because of his interest in birds, he was already quite familiar with a primary online source: the Cornell Lab of Ornithology. Re-listening to the National Public Radio Environment Report segment, he made a list of birds featured in the audio essay and highlighted his last question. “How,” he asked, “can we help the birds?” In contrast to centering the human when examining the effects of climate change, Theo centered the animals. He interrogated the scale of human impact.

**Shaping Inquiry through Problem Solving**

A few days later, Ms. O’Toole conferred with Theo again. “OK,” she said, “What is next? Where did you find answers? What research did you do?” Theo recounted the last few days of online wonder and discovery. After, they listened to the NPR segment again. Theo noted what three birds the news segment suggested as being the most impacted by warmer weather. “The black-capped chickadee,” Theo wrote, “the warbler, and the house finch.” With a swipe and a click, Theo returned to the Cornell Ornithology Lab website. He searched for each of these birds, in addition to others in the mid-Michigan range. Afterward, Ms. O’Toole encouraged Theo to share with the larger class. “Ask your friends, Theo.” Ms. O’Toole suggested. “What do they think? Ask them why they would care? How would they listen?”

During the following class session, Theo started Genius Hour at the community carpet. After previewing his project and reading his guiding questions to the group, Theo asked his classmates for suggestions. “I would want to see the birds,” Anne, a fellow first-grade student, declared. “Yeah,” Star, a second-grade peer, agreed, “I’d want to know what they look like. Maybe I saw some of them.” Theo wrote down parts of what his peers discussed. “So,” Ms. O’Toole detailed, closing community circle, “it sounds like we need to see the problem to solve it.”

Over the course of the next four days, Theo spent Genius Hour imagining how to share and see the problem. As a solution, he created portraits of each bird while continuing his online research via the Cornell Ornithology website (see Fig. 3). In addition to his drawings, Theo also included brief biographies detailing the bird’s full name, range, and if they were returning late or early to mate. Ms. O’Toole examined Theo’s artifacts later that week. “OK,” she started, “but how are you going to get people to care?” Theo drew a blank. “How did you first hear about the problem, Theo?” Ms. O’Toole asked. “My dad...” Theo started. “No,” Ms. O’Toole reminded him. “Listen to my question. Slowly. How did you first hear about...” “OH!” Theo exclaimed. “I can use sound. I can use the Yeti [a stand-alone microphone].”

Over the course of the next two weeks, Theo used the classroom Yeti, a large microphone the
class used to record audio for podcast happenings and events on their personal Weebly page. Toggling between the Cornell Ornithology site and his iPad, Theo recorded the Creative Commons licensed calls on the tablet’s VoiceMemo application. After, he read and recorded the information he had previously scripted. In total, Theo had two sound bites for each of the birds: the bird’s call and a voiceover detailing pertinent information about the bird (see Fig. 4).

Using the affordances of sound, Theo brainstormed ways to deliver the problem as well as detailed the specifics of its effects. In a 1:1 check-in with Theo, Ms. O’Toole asked how sound would work with the pictures. “How do you get into See-saw?” Ms. O’Toole inquired, hinting at a possible solution. Theo looked around the multiage space, examining the walls and multiple QR codes that provided entrée into the augmented worlds of classroom life. “I can use a QR code!” Theo exclaimed. “Yes,” Ms. O’Toole said, smiling, “but you need some more sound. Think about encouraging people to help slow climate change.”

Shuffling back to the iPad cart, Theo brainstormed possible sites he could explore to find ways to help prevent the warming of the Earth. Previewing the NASA Climate Kids website, a favorite of his family’s, he made a list of everyday ways kids could help slow climate change. Turn off the lights. Grow a garden. Bike or take the bus, he recorded. These small asides were also audio-recorded using the Yeti. With Ms. O’Toole’s assistance, Theo then stitched the sounds together using Audacity and uploaded the file to his Google Drive. Copying the audio file’s link to a QR code generator (https://www.the-qrcode-generator.com/), he created icons that were later cut and glued onto the bird portraits.

Theo’s ability to problem solve and circulate his vision for possible solutions drove his participation and design. He ultimately wanted to connect more directly with a real audience and advocate for change.
I want to slow the scene down here, however, to talk about the critical literacy and digital inquiry that emerged on the scene. Albeit implicitly, Theo considered how message mediated form and how delivery, ultimately, was responsive to representation and audience. In engaging with sound (e.g., recording voice-overs and remixing bird calls gathered from Cornell’s online ornithology site), Theo spoke back to the technology and the mode that first brought him the message—sound, via the radio. As such, his own identity was now not only that of narrator, but also of social and civic actor (see Fig. 5).

**Designing for Equity by Advocating for Change**

Wrapped with twine and covered with sheet protectors (materials safe for the earth, according to Theo), information about each bird was posted on trees throughout the garden. Theo’s sound installation—eight birds for eight trees—invited guests to scan QR codes linked to audio that opened with the focal bird’s call. When I talked to Theo in our last interview, I asked him about how the project started and why he wanted to explore how climate change “messed up” mating patterns for Michigan birds. “Like,” Theo starts, “it was on NPR, but why? They didn’t do a good job giving the why. That’s important,” he added. Swiping and clicking his way into Seesaw, he shares his personal archive with me. In it, links to pictures of the black-capped chickadee, the goldfinch, and environmental education websites open. “I want people who play in the garden,” Theo told Ms. O’Toole in his closing Genius Hour conference, “to know it’s a place where a lot of local birds used to live. We lived with them. This is their range. We should do something. It’s not just our home, it’s their home, too. We need to do better.”

For Theo, designing for equity meant inviting his audience into not only seeing the problem, but hearing about it. Theo’s sound art installation provoked community members to pause their perceptions and encouraged them to swipe, listen, and act. Through designing a sonic space, Theo highlighted the troubled human–nature interface and advocated for change. He advanced environmental justice, and in doing so, created a sonorous scene of what the space might sound like without human interference and the problem of climate change.

For young learners like Theo, writing toward equity and advocating for change is a rhetorical project. In our penultimate interview, just before Theo unveiled his sound art installation to his classmates and school community, I asked him about modal preference for design.

**Wargo:** Why did you use sound? Why not just make a digital poster like Star or a timeline like Ariadne?

**Theo:** Well, because in the writing, like just normal writing, it’s kind of hard to explain what they [birds] sound like. When you have a sound, it’s much easier to. I’ve read nonfiction books about birds. In them, they say, “whatever, whatever uses a chitter chatter sound” and that’s what it usually does in books. But this is a problem. Climate change is a problem. It’s not just about birds. People need to hear it.

**Wargo:** Do you think people will listen or will they only think about it, like, it is just a problem for birds?

**Theo:** No. Like it may not hurt you now, but it is hurting birds. We should still help birds because in the end, we’re helping us.
Pointing to more standard forms of expository writing in our exchange, Theo highlighted how modal matching—modes replicating meaning/rhetorical equivalence with other texts—is important when designing toward change. Whereas personal digital inquiry largely leverages the affordances of mobile applications and tech-tools, it only became a mechanism for equity when mode matched purpose. For Theo, sound acted as a critical locating mechanism. It attuned listeners to hear, act, and advocate for change. It enveloped them as witnesses to the problem of climate change. Sound created a sense of what the world might sound like without human interference. Ultimately, sound allowed listeners to hear what may otherwise have fallen silent.

**Building Community through Communicating Ideas with Others**

When it was Theo’s turn to share his PDI project, he led his class to the garden. With tablets and iPads up, the students ran, skipped, and zigzagged between trees. Children worked in pairs to wander into wonder and hear the sounds. “It’s pretty loud,” Ms. O’Toole said to me. “Next time, we can use headphones,” she tells Theo. The garden, a space otherwise quite quiet during school hours, now sings. A cacophony of calls and scripted speech, the garden builds community through voicing a shared problem (see Fig. 6).

Looking up toward the sky, Theo grabbed my hand and forecasted a rainy Michigan afternoon. Worried about how the birds will hold up, I asked Theo to reflect. “How long do you want your sonic art installation to live in the community garden?” “Like five years,” he replied. “That’s a long time.” When I asked him why five years (I am curious at the specificity of time), he responds, “That’s more than half my life! Plus, who knows if any of these birds will still come here. This is just a project that hopes people will listen.”

In observing dismissal that afternoon, I witnessed the success of Theo’s critical literacy project. Parents, community members, and school faculty all meandered out to listen to Theo’s sound art installation. Featured as the “Thompson Terrier of the Month”—a school-wide honor highlighting students for their academic achievement and service—Theo’s project made school news. Widely publicized earlier that day, visitors were made privy to the garden’s sonorous sensibilities.

Theo’s personal digital inquiry did not stop at reflection. Rather, through using sound as a critical literacy resource, Theo used PDI to build community and communicate his ideas. His inquiry was no longer solely personal, but local. He advocated for a cause important to him and invited other community members and peers to hear and share in the work. Theo re-educated the senses to environmental justice and climate change.

**Engaging Digital Inquiry to Cultivate Critical Change**

Fostered through authentic real-world problem solving that connects the global to the local, personal digital inquiry has the potential to become critical literacy. While not exhaustive of all learners in Ms. O’Toole’s classroom, the sonic exemplar featured here helps anchor the sophisticated work captured through PDI. As a critical instance case, Theo’s project serves as a springboard to not only inspire ideas for implementation and building community change in other language arts classrooms, but to turn up the volume on sound as a compositional resource in critical literacy.

First, personal digital inquiry for Theo became a means of response to a problem larger than that of his classroom community. He used the affordances of sound to reclaim voices, invite readers to tune in, and to contemplate climate in
ways that were perhaps not otherwise investigated in his primary grades classroom. As participants in Theo’s speculative future, Theo’s classmates did not read his text, but instead experienced his design. Through scans of QR codes, listeners were welcomed into an acoustic ecology of civic action that they, without Theo turning up the volume, may have remained deaf to.

Second, examining PDI as a form of critical literacy supported new forms of civic action, participation, and deliberation. PDI allowed young children to not only voice and write against injustice, but design for possible, not just preferable, futures. By making accessible new tools and platforms for knowing and being, Theo revealed innovative ways of making problems known.

Some, however, may argue that Theo’s artistic and experiential approach to sounding out the problem of climate change is not enough. While warranted, I would argue that we need many approaches to understanding how the complexity of problems like climate change and environmental justice are interpreted by young children. For many of the adult listeners, Theo’s sound installation was physically unsettling. Heard through their iPhones and/or Android devices, the volume of birds no longer present in the range provided a sonic artifice. Theo drew attention to a lost soundscape of climate change. Possible to imagine and necessary to consider, many of the birds Theo streamed through the trees were no longer part of this community’s history. In short, we need multiple perspectives, including those from young children, to examine our own understandings of self and the environment.

Mode matters when engaging digital inquiry to cultivate critical change with young learners. Sound, for Theo, was not solely an affordance of production, but also a tool for critical engagement. Sound pointed without confirming and suggested without asserting. It provided an immersive and interdependent experience for listeners. First situated as a mentor text, sound provided a platform to advocate for change. It foregrounded the “audible contours of . . . inequity” (Wargo, 2018, p. 15). Sound, for Theo, was an ethical response to a silent climate crisis.

Conclusion

Theorizing personal digital inquiry as critical literacy highlights not only the technological means through which young children intervene in the physical world, but also the representational means through which they generate meaningful accounts of speculative futures. As Theo’s sound art installation amplifies, PDI brings forth new audible understandings of possible participation. Theo saw himself as a civic actor capable of communicating change. He was an informed author and critical creator. Through sound art, Theo cultivated an acoustic ecology of collaboration.

In sum, PDI becomes critical literacy when children and youth are not only asked to analyze and reflect, but to generate new information, to build community, and to communicate critical change regarding a shared referent. Critical literacy should not be a process where we only name power and inequity with students, but a core practice where we work to legitimize students’ own inquiry through processes of personal production. These practices must be heard, documented, and disseminated as knowledge for cultivating a citizenry in its own right.

References


Jon M. Wargo  |  SOUNDING THE GARDEN, VOICING A PROBLEM

Using popular culture, new technologies and critical literacy in the primary classroom (pp. 115–133). Suffolk, UK: David Fulton Publishers.


In this strategy guide, you’ll learn how to use kidwatching to track and support student learning, similar to the researcher in the article. Teachers observe and take notes on students’ understanding of skills and concepts and then use the observations to determine effective strategies for future instruction.


This Inquiry Chart (I-Chart) strategy described here is one that allows students to examine a topic through integrating prior knowledge on the topic with additional information found from a variety of sources.

The I-Chart strategy is organized into three steps, each of which consists of activities meant to engage and aid students in evaluating a given topic: 1) Planning, 2) Interacting, and 3) Integrating/Evaluating.

http://bit.ly/2WMT5wJ

In this lesson plan, students observe animals using one of the many webcams broadcasting from zoos and aquariums around the United States and the world, with a focus on observation, discussion, questioning, and research.


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