Learning and Teaching in the Ruins: Reassembling Innovation Debris After Grants Expire

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Abstract: This paper draws on an ethnography of a civic journalism unit in an urban high school, originally designed as part of a larger technology integration intervention sponsored by several education innovation grants. While the research design aimed to document civic learning outcomes of the digitally-mediated curriculum, the data collection occurred after the external grants expired, leaving the teacher to conduct the unit without additional support. I describe the school as a *liminal educational landscape*, transitioning between contradictory trajectories of urban de-industrialization and market-based interventions, and characterized by a pervasive culture of precarity, negotiability, and vulnerability. I explore how these conditions interacted with technological *innovation debris*—digital devices and infrastructural remains of the intervention—to form shifting learning assemblages that occasionally cohered with the unit's *curricular virtualities*, but often reassembled into other technology-based activities relevant to the new cohort of students.

Introduction

For many compulsory and voluntary participants of the public education project (students, teachers, administrators), life and labor of schooling is a deeply precarious affair. Precarity describes the condition of economic insecurity and unpredictability, the non-guarantee of survival in the social system as it is currently organized. Although uncertainty and contingency are part of life's dynamic processes, precarity is unevenly distributed, rendering some members of society–usually those already marginalized by histories of colonialism, enslavement, white supremacy and cis-hetero-patriarchy–even more vulnerable. In the context of schooling, this "educational precariat" includes "recent immigrants, indigenous students, students who are gender non-conforming, or who have special learning needs, or who live in poverty, or who are children of the precarious workers" (Chinnery, 2014, p. 3). To mitigate the effects of socioeconomic unevenness, equity-oriented learning scholars argue for the need to provide "access within classroom learning environments" and "access to educational opportunities" for vulnerable students from non-dominant communities (Hand, Penuel & Gutierrez, 2012). But what happens when the access itself is contingent, dependent on unstable social and economic structures and shifting configurations of stakeholders and investments, when it fails to guarantee survivable futures of even the access itself? In this paper, I wrestle with these questions by analyzing the aftereffects of a university-led technology intervention that set out to create a "digital media ecology" in an urban, neighborhood school. Specifically, I study the implementation of a digital journalism unit developed as part of the intervention, and what remained of it after the grants expired and the human support for the innovative curricula left.

Project background

"Leland Voices" (all school- and project-specific names are pseudonyms) was an outgrowth of a multi-year, multi-million-dollar grant-funded technology integration intervention called the Digital Infusion Project (DIP), designed using principles of connected learning, media literacy, and studio- and arts-based pedagogy. DIP was sponsored by a large federal innovation fund to partner with Leland High School, an "underperforming" public school in a large Midwestern city, to infuse digital media and project-based learning throughout the curriculum. The intervention consisted of several connected strategies: 1) acquiring laptops, tablets, digital cameras, programmable maker kits to be used by the school; 2) providing professional development for incorporating new technologies to interested teachers, 2) partnering teachers with media artists to design project-based, media-integrated curricular units, and 3) building a Digital Media Lounge—a colorful, youth-centered space with video and audio production equipment, games, 3D printers—in an unused area of the school, staffed with digital learning mentors hired by DIP. An additional grant was secured to develop civic journalism units specifically in English Language Arts (ELA) classes. Throughout the three years funded by these grants, two teachers at Leland worked with media mentors, teaching artists, and expert journalists to create a civic journalism curriculum, build a Wordpress platform called Leland Voices, and facilitate a youth editorial board that worked on publishing and promoting student work.

    The original intent of my study was to document the generative learning outcomes of the Leland Voices project. As someone who formerly developed a youth journalism program (Ferman & Smirnov, 2016) and researched the affordances of journalism production for developing civic literacies (Smirnov, Saiyed, Easterday

& Lam, 2018), I recognized this intervention as having design features of a robust journalism curriculum: an authentic media platform for circulating student writing, a growing archive of published examples that helped new students develop a sense of disciplinary and genre conventions, and a leadership infrastructure that imitated the production process of professional journalists. Pilot data collection was promising as well: observations and interviews I conducted as part of DIP's evaluation process had shown that students were developing a critical stance on the news media industry, cultivating journalistic identities, and using multimodal resources to make sense of complex civic issues. However, after three years of iterating on the promising design, the multi-million grant ran out, and the funds to support the professional journalist and media artist were no longer available. One of the teachers who worked on the intervention, Ms. Watson (all names have been changed to protect participants) decided to continue teaching the unit by herself. Since the system was in many ways already "set up"—the technology used would stay in the school, the publication platform was established, the curriculum taught several times—the longevity of this unit seemed feasible. I coordinated with Ms. Watson to conduct data collection in her classroom in Spring of 2016, a year after DIP's funding ended.

But a year after DIP's departure, without the additional supports the grants provided, the underlying characteristics of the school overwhelmed both the unit and the broader vision of a school-based digital media ecology. The Digital Media Lounge, which cost many thousands of dollars to build and equip, mostly stayed locked, because there was no full-time dedicated staff to manage it. As I began coming to Ms. Watson's class, among the pieces resembling the activities of Leland Voices as implemented under DIP, the majority of what I observed was students *not* doing, finishing or publishing their work, new assignments that seemed innovative and provocative when introduced but that fell far from their vision in practice, and instead students engaging in many other kinds of technology-mediated activities, such as playing video games or watching basketball. Determined not to make conclusions grounded in deficit-based thinking (Valencia, 2010), I realized that I needed different theoretical tools to make sense of the contradictions and complexities I saw unfolding. I expanded my inquiry to meet what the data: *What happens following an involved, multi-year encounter between an external technology intervention and a public school affected by multiple forms of social and economic precarity? What sustains after the infusion of capital and outside designers leave? And what possibilities for civic learning still emerge in this post-intervention landscape?*

In what follows, I try to answer the above questions by weaving theoretical concepts with scenes and patterns from ethnographically produced data. Through this weaving, I suggest that DIP's intervention into and subsequent withdrawal from Leland intensified the school's status as a *liminal educational landscape*, amplifying the already felt conditions of precarity, negotiability, and vulnerability. I then trace how these intensified qualities and DIP's *innovation debris*—the curricular templates and technologies remaining after the intervention—assembled for a new cohort of Leland students in ways that rarely cohered with the original visions of the Leland Voices unit but sometimes still accomplished moments of civic, political, and journalistic learning and becoming.

Conceptual framework

Scholars of education have recently called for an ontological turn in research on learning, pushing on existing sociocultural and ecological theories for being overly holistic – attempting to account for and make sense of a vast interdependent complexity of relationships and interactions that constitute learning within a single coherent framework. Far from advocating for reductionism, however, researchers identifying with *post-structuralist*, *sociomaterial*, and *affect* theories posit the need to embrace an even greater degree of complexity, chaos, and contingency to explain the phenomena of learning and literacy (e.g., Leander & Boldt, 2012). The theory of "assemblage," developed by Deleuze and Guattari (1988) offers some possibilities for such ontological rapture. Deleuze and Guattari rejected the idea of essentialized identities or unified wholes, instead articulating an ontology of difference and relationality. As such, they described *assemblage* as a constellation of heterogeneous elements with a unique history and trajectory, moving towards multiple directions at once, rather than towards a single, predetermined, linear telos. As literacy scholar Victoria Carrington (2012) argues, "an assemblage has room for tension, mismatch, and ongoing reconfiguration" (p.209). The assemblage becomes a particularly apt lens for understanding what I saw at Leland—the abandonment and reassembling of contextual and curricular elements, including the teacher, students, technologies, and concerns.

Deleuze and Guattari's concepts of *territorialisation* and *de/re-territorialization* are also helpful for thinking about multiple assemblages that form and transform within the classroom space. Territorialization is "the process of establishing spatial boundaries" and "increasing 'internal homogeneity' of any particular assemblage" (Carrington, 2012, p.209). Deterriorization, on the other hand, occurs "when the various component parts of an assemblage begin to move in different directions as the connections between them become loose and internal homogeneity weakens" (Carrington, 2012, p.209). Certain elements of an assemblage can function as *lines of flight*—mutations that can provoke deterritorialization, forging opportunities for new assemblages to form—

reterritorialization. In my study, previously designed journalistic activity structures *deterritorialized* without additional staff to guide students through the process of publishing their stories to the Leland Voices Wordpress site, while access to devices connected to the internet became *lines of flight* that students used to explore other interest-based online activities, such as watching basketball or looking at pictures of animals or fashion. Other times, these same interests and activities became temporarily *reterritorialized* when the teacher assigned students to write a personal blog, and students researched and wrote about basketball and fashion.

Finally, the concept of *virtuality* represents what is real but not actual in an assemblage. A useful example of virtuality is the boiling point—the temperature at which a substance turns from liquid to a gas. The liquid includes the potential of a gaseous state, given a certain controlled parameter (temperature threshold). That virtuality—possibility of gaseous state—is real, even when the liquid is not *actually* boiling. I came to think of the previously demonstrated accomplishments of Leland Voices as its *curricular virtualities*—the "boiling points" when students took up authentic journalistic identities and produced insightful investigative articles—that only dependably actualized only when specific parameters, such as expert production and editorial supports, were also present.

Another important concept I draw on to make sense of this project is liminality. *Liminality* describes the quality of ambiguity or disorientation associated with transitional periods of moving from one place, status, or situation to another. The term comes from the work of Victor Turner (1969), an anthropologist who studied the Ndembu people of Zambia and first defined liminality in his analysis of rites of passage that were performed for those undergoing transitions in tribal roles. Turner wrote that the characteristics of liminal personae or "threshold people" are "necessarily ambiguous, since this condition and these persons elude or slip through the network of classifications that normally locate states and positions in cultural space" and that in their transition, liminal entities are "represented as possessing nothing" and expected to "accept arbitrary punishment without complaint" (p.95). Educational researcher Pamela Bettis drew on these ideas in her study of Wood High, an urban school in a de-industrializing city, undergoing social and economic restructuring (1996). She argued that the effects of the liminal conditions of the neighborhood and school made students feel more anxiety about the future but also to engage in more fluid and less hierarchical social relations with the diverse members of the student body. Bettis proposes that liminality is "a synergistic concept that links the microworld of the Wood students with the macroworld of deindustrialization and postindustrialization" (1996, p.121). Similarly, I take liminality up in my analysis to understand how competing forces of urban de-industrialization, neoliberal school reform, and educational innovation interventions construct Leland High School as a *liminal educational landscape*— transitioning between multiple contradictory cultural and institutional states, and how this unstable position contributes to the school's felt atmosphere of precarity, negotiability, and vulnerability. Each of these characteristics in turn affects classroom-level learning interactions, and thus the possibility of particular curricula "taking hold" at Leland.

Research-assemblage

My research was designed in the tradition of ethnographic grounded theory (Strauss and Corbin, 1990) and conceived as a case study, an in-depth investigation of a phenomenon in a real-world setting where "the boundaries between phenomenon and context are not clearly evident" (Yin, 2009, p.18). For the 5-week duration of the unit, in May-June 2016, I visited Ms. Watson's two freshman ELA classes— first period (8:00am-9:30am) and fourth period (2:00pm–3:30pm)—2-3 times a week, and wrote field notes, and recorded audio and video of the classroom. I conducted semi-structured interviews with 11 focal students across the two classes and collected digital copies of student work. I also interviewed Ms. Watson twice, first in the beginning of the unit about her pedagogical goals and her history as an educator, and later about her reflections on the implementation. The field resisted my orderly research protocol at every step: Ms. Watson often had to spend 30-40 minutes at the beginning of the morning class waiting for enough students to show up to begin the lesson; several of my focal participants stopped coming to school regularly or completed no projects by the end of the unit; many of the completed student pieces ended up unedited and unpublished, nullifying the "authentic platform" effects I was hoping to observe. After each visit to Leland, I drove back home and recorded an "Afterthought" into my phone, reflecting on what happened that day, trying to make connections to known theories, and capturing frustration and confusion about what I saw. Later, I incorporated these afterthoughts as a source of *emotional data* (St. Pierre, 1997)—paying special attention to the intensely-felt moments I encountered within my own subjectivity as those I needed to try harder to understand.

I similarly iterated my analytic process to make room for discontinuities and insights that might meet the shape of the data. I began by sequentially open-coding my collected field notes, interview transcripts, videos, photos, and afterthoughts through traditional qualitative technique of labeling events and conceptualizing emerging themes, then writing memos to capture my preliminary assertions (Strauss and Corbin, 1990). But as I

re-immersed into the setting and feel of Leland High School and Ms. Watson's classroom, I was struck by the difficulty of capturing consistent patterns of student activity or progress toward project completion, noting instead the many instances of physical and attentional wandering, disruptions from outside the classroom and from inside the networked worlds of technology, of students negotiating assignment structures and institutional rules. From here, my reading of assemblage theory (DeLanda, 2016; Strom, 2015) led me to begin viewing the relations between the students, teacher, space, technology, and past implementations of Leland Voices as dynamic constellations of heterogenous elements, moving in multiple directions at once—continuously de- and re-territorializing. This ontological shift suddenly made the environment "make sense" and in repeated reading of the data, certain episodes emerged as temporarily cohering, producing what Leander & Boldt (2012) call "affective intensities"—moments that were palpably different than the regular stream of life. Some of these moments I perceived as "meaningful civic learning" (e.g., two students interviewing a cafeteria worker about why the food in the school was no good, and her sharing that 25 years ago the school had its own kitchen and bakery, until economic tides changed and all the lunches became provided by private for-profit corporations) while others were "definitely not civic learning but something else powerfully engaging to the actors in this situation" (e.g., a student using the school laptop and re-arranging furniture to facilitate collective watching of and commenting on basketball video replays, an activity genre that at times even seduced the teacher to join in) then changing again into something else. I zoomed into these moments using approaches from situational analysis (Clarke, 2003), making "messy situational maps" that identified both human and non-human participants and other spatial and emotional elements of these assemblages— the weather, the day's news, individual and collective moods. Finally, discovering the "un-methods" of post-qualitative inquiry (St. Pierre, 1997) and rhizoanalysis (Masny, 2013) allowed me to experiment with ways of freely layering and weaving data, impressions, theories, memories, and desires, to do so non-linearly, and to invite new questions and provocations rather than force settled conclusions, and to generate new concepts that break open existing ways of understanding school-history-technology-learning relations.

Findings

Reassembling the school as a liminal educational landscape

The first conceptual move that helps to make sense of my experience with Leland Voices is re-thinking the settled entity of school itself. There are quite a few things we expect to be predictable in a school environment: stability and reliability of participants and classroom genres, hierarchical authority relations between students and teachers, the anticipation that students will be sufficiently motivated by disciplinary disincentives and academic grades to complete whatever work the teacher assigns them. But at Leland, the patterns that I consistently observed throughout my data collection were in fact the opposite: low and chronically late attendance, ambivalence towards rules and authority, and students' persistent attunement to violence, death, and existential vulnerability in their interviews, comments, and projects. It was still called a school and looked like a school—there were classrooms, a gym, school colors, a mascot—but a lot of times it *felt* more like a waiting room, a transitional space. I began to consider Leland in terms of its long history as a city school, and the role DIP's short-lived presence played in shifting and then reinforcing its trajectory.

Leland High School is located in a formerly industrial neighborhood of a large Midwestern city, in a 4-story building constructed more than 100 years ago, with room to house over 1900 students. Today, the neighborhood population is half of what it was in 1930s; consequently, student enrollment at Leland has also been steadily dropping. In 2016, Leland had about 311 students, a 77% decline in enrollment from 10 years before, leaving most of the building unused and empty. Enrollment and graduation rates increased slightly during the three years DIP was involved with Leland, but plummeted immediately after. Leland's loss of student body was not due only to declining neighborhood population. Although more than 2000 high school aged youth live inside the school's attendance boundaries, most of them choose to attend one of the other 170 neighborhood, magnet, or charters in the city's public school district. Among Leland's population, approximately 60% are African-American, 27% Hispanic, 9% white, 2% Asian, and 2% other. Between 28-60% students are estimated to live in conditions so unstable that they are considered homeless. 95% of students come from low-income families, and the chronic truancy rate is 86%, referring to the proportion of students who miss over 5% of school days without a valid excuse. These neighborhood and population conditions are a product of many interacting historical, political, and economic forces, including white flight (Fairlie & Resch, 2002), urban de-industrialization (Weis, 2013), and market-based policies of school choice (Lipman, 2013). DIP's short-term presence at Leland reflects another contemporary influence—philanthropic, university, and government-driven infusions of technology in schools that promise to revolutionize education and drastically improve student outcomes, but often run out of steam just as they encounter the many challenges of systemic transformation (Cuban, 2009).

Under the effect of these macro forces, Leland is a site of contradictions: the industrial employment history of the neighborhood contradicts its present poverty, the physical size of the school is a strange mismatch to its current enrollment numbers, the resulting lack of financial resources is then contrasted by the technologies DIP brought in, coupled with an unusual (but temporary) amounts of support and attention for participating teachers and students. Leland High School is a 100 year old assemblage in transition between competing economic, political, and social trajectories. As such, its very status as a "school"—an organized, reliable local institution for learning—is liminal, unsettled. It is neither the school it was built to be, nor the sort of new school that would be newly opened in early 21st century United States. In 2016, it was also transitioning out of the influence of an external grant-funded intervention that aimed to have an *ecological* impact on its teaching and learning capacity, and transitioning back into an austerity-driven policy landscape where urban public schools are under a constant threat of closure (Lipman, 2013). This ongoing, compounding state of liminality produced in Leland a felt atmosphere of *precarity, negotiability*, and *vulnerability* that in turn affected the possibilities of learning encounters and designs in the school. As I read and re-read my field notes, I found these qualities emerging and patterning across spaces and scales—in the halls and inside classrooms, in the school as a whole system and in the lives of individual students.

Precarity is the uncertainty and instability of present and future conditions. With Leland's enrollment declining, the availability of school funding for teachers, support staff, infrastructure, and other basic needs was always in danger of disappearing. Students' living situations were precarious, which made their attendance precarious. On a given day, the morning class I observed at Leland which began at 8am and was supposed to have 18 students, had on average 3 students present half an hour into the period, 6 or 7 by the end of the class at 9:30am. Anna Tsing (2015) writes that "precarity means not being able to plan" (p. 278), due to uncertainty and unpredictability of near-future conditions. In an interview, Ms. Watson described the difficulty of lesson planning at Leland: "this year is the worst it's been as far as like students not coming to school and it is really stressful because I plan stuff that I think that'll take a day and then it ends up taking three days because either the kids don't get it or they're not here." Precarity thus makes it difficult if not impossible to anticipate desired learning trajectories, especially ones that might require collaboration or progressive curricula developments, like building more advanced skills and projects by leveraging products from earlier work.

Negotiability was most visible in Leland's loose and inconsistent application of rules and authority. Although the school had written uniform and technology use policies, students appeared to follow these policies arbitrarily, and they were only rarely enforced by adult staff, as punitive measures would push the few attending students out of the school. Movement through space was negotiable; across my frield notes I began noting and counting patterns (see Table 1) of "out-of-class interruptions," when students and adults who were not supposed to be in Ms. Watson's class knocked on her door and came into the room to talk to the teacher or a student friend. I also noted many instances of "students wandering through space" to walk around the room, interact with a classmate, or look out the window. Students "opted-out of teacher specified assignments" to either watch sports or talk to friends or to simply sit and not do anything almost as often as they "opted in" to work on the designated task. Even in the instances of opting-in students often "negotiated assignment expectations" with the teacher, asking for adjustments. Negotiability also manifested in dealing with technology. Ms. Watson said that she's "always troubleshooting stuff" because the school's technology is "sometime-y, it's just really sometime-y."

Table 1: Instances of "negotiability" across 14 class sessions

out of class disturbances	29	students opting out of assignment	37
students arriving late	40	studens opting into assignments	58
students wandering through space	47	students negotiating assignment expectations	104
students joining other students' activity	55	sts or teacher negotiating/troubleshooting technology	46

Whereas precarity refers to an instability and unpredictability of future circumstances, vulnerability is more pessimistic, denoting an openness and susceptibility to potential loss, attack, or damage. Leland students or their relatives frequently lost their lives to gun-related and other violence. When I asked students in interviews what kind of news they paid attention to, they told me they checked their Facebook and news sites for reports of local shootings, "to know not to go over there, in that area," or to see if it's someone they know. About two-thirds of the way into my observations, a Leland sophomore and Ms. Watson's student from the previous year was fatally shot by a friend in his house. This was the 4th student she had lost in her 4 years teaching at Leland. Students often focused on effects of violence and death in their journalism projects. One student, Jabari, wrote a blog post for Leland Voices about how he deals with grief, reflecting on the death of his uncle, grandmother, and the recent murder of his 21-year-old cousin, who was recently shot in a drive-by, leaving behind her young orphaned son.

The post talks about how writing poetry about staying "strong and powerful" in the face of painful circumstances has helped him cope, and captures the tension between hope and defeat that was felt by individuals and the school as a whole.

Liminal ruins: Curricular virtualities and innovation debris

Leigh Patel writes that "learning and knowledge are never placeless. How humans and nonhumans learn and grow is always situated in specific places, in specific dynamics" (2015, p.61). The above conditions were just as salient in the school when DIP's designers started Leland Voices, and in fact many of the student projects produced during DIP's time dealt with neighborhood violence and challenges of learning in an atmosphere of unruliness and uncertainty. However, the projects were completed with the help of a professional photographer, a digital media mentor, and a journalist, who also supported Ms. Watson in running a youth editorial board that edited, published, and promoted student work. The polished journalistic artifacts and editorial board were *curricular virtualities* – demonstrations of what was possible at Leland when certain parameters, including both technology and a team of support staff, were present to implement the program. But after the funding enabling this work expired, the intervention removed the human infrastructure that made the networked tools and curricular plans work together as envisioned. What was left was *innovation debris* —digital devices, tools, and platforms bought and produced during DIP's multi-faceted experimentations—now scattered around the school.

Reassembling "Leland Voices" after DIP

In conducting the Leland Voices unit on her own, Ms. Watson felt she no longer had the capacity to lead a youth editorial board or to arrange outside visitors to come to the school to be interviewed for student stories, but thought she could supplement the unit with new projects related to social media—a big influence in her students' lives. She assigned students to research political movements that originated on social media, like Black Lives Matter and Occupy Wall Street and to create their own reaction memes (images overlayed with text that illustrate an emotional response to a situation) that they could share on the Leland Voices platform. Ms. Watson arranged students to use Google Docs, Slides, and Forms to work on all these projects, usually in a computer lab across the hall from her own classroom, or by wheeling in a cart of Chromebooks acquired during DIP's intervention. In other words, she reassembled the techno-pedagogical resources she'd learned to use during DIP's time to develop new media-integrated assignments. But her new assemblages often deterritorialized: Ms. Watson didn't quite remember how to make new student profiles on Wordpress and spent time troubleshooting the platform during class. While some students enjoyed making reaction memes (one student created 22, 19 more than assigned), most of the final memes dealt with personal or relationship themes and featured suggestive or profane language, so Ms. Watson retracted her plan to share them on Leland Voices. The social movement assignments also didn't pan out as she hoped; the freshmen students struggled with comprehending the complicated texts they found about Occupy Wall Street and Black Lives Matter in their Google searches, and irregular attendance made coordinating any kind of social media movement effort from within the classrooms unlikely. I document these setbacks as themselves lessons in reassemblage. Innovation debris is not useless stuff—the tools and spaces and templates may still be able to perform their designed functions, or even be capable of other novel uses—but they must be reassembled by those who continue to work in the space. After DIP's departure, not only did Ms. Watson lose three media experts to help her actualize the Leland Voices curriculum, the only remaining source of tech support was one IT administrator shared by three schools, who came every two weeks to fix the copier or attend to some school-wide technical priority.

Competing student-technology assemblages

The freshmen students in this implementation of Leland Voices were vaguely aware about the past Digital Infusion Project, but they also encountered the school *as is*, working with what was currently available and relevant to them in the present. In interviews, I learned that most of them did not have a computer at home, so any technology access they had during school provided an opportunity to catch up on interest-based activities. One morning, I observed Monica interviewing her classmate Malcolm for her news story about the uniform policy. Malcolm had a Chromebook open to begin writing his own article about lunch food. He had typed four sentences into a Google Doc, but then opened another tab, plugged in his headphones, and navigated to NBA.com to browse through the site's recently added video selections. While Monica asked him questions she'd jotted on her news story worksheet, such as "do you think we should wear a uniform if we get good grades?" Malcolm kept clicking on different videos, with one headphone in his ear. In the span of 8 minutes that Monica asked him questions, his screen played three commercials for StateFarm insurance and two basketball replay analysis videos that he watched while responding to Monica. Ms. Watson, who was in the process of re-stapling her classroom bulletin board with a fresh set of paper, gradually moved closer to and listened into the interview scene, adding her own perspectives

on the issue and advising Monica's interview process. As Monica's interview style became progressively more playfully interrogative (she loudly challenged Malcolm to "Think! Think! Dig deep into the question," causing him to laugh), two other students began watching the scene and inserting their own opinions.

These kinds of competing and continuously shifting assemblages frequently emerged and mutated in Ms. Watson's classroom. Multiple human and non-human actors participated in forming and disrupting the situation: students, teacher, computer, headphones, pencil, worksheet, desks, the bulletin board, NBA.com, StateFarm, GoogleDocs, as well as mental constructs such as Ms. Watson's and Monica's understanding of the interview genre. These multiple assemblages were simultaneously oriented towards disciplinary civic learning goals (e.g., the interview as part of the news article project) and away from them (e.g., Malcolm watching NBA.com), while external attention to Monica's interview from the teacher, myself and my camera, and other students, made her actions more performative, both reinforcing her disciplinary engagement and motivating her to become more entertaining, a goal that entered into tension with the journalistic object of gathering information from a source.

Mobilizing precarity, negotiability and vulnerability for civic learning

There were times, however, when productive civic journalism learning assemblages did occur. For instance when introducing the news story assignment, Ms. Watson leveraged the wandering culture of the school to call upon a teacher walking down the hall and asked her to serve as an example interview subject. When her class began to work on their own news stories, Ms. Watson fetched students from other classrooms upon her students' requests, knowing that this would be possible and allowed at Leland. When Jabari, who was supposed to be in a math class at the time, casually walked into Ms. Watson's room to work on his geometry worksheet there, another student, Brian, interviewed him about Leland's student behavior. In this way, Ms. Watson actually mobilized the usually deterritorializing "out-of-class interruptions" towards the goals of the journalism assignment. She also leveraged students' expressions of vulnerability when they complained that the lunch food is "dog food" or the water in the water fountains "tastes strong" or that "teachers here don't teach us anything" to encourage them to do their news stories on those issues. She even took a positive spin on students' precarious attendance, announcing that "it's actually kinda cool that we have a smaller group cause I can give you more attention with the writing of your paper."

Discussion and implications

While the experience of Leland is specific, its status as a liminal educational landscape and its experience with a grant-funded technology infusion will be familiar to many researchers and educators in the U.S. This case study is a reminder of the implicitly colonial nature of much of grant-funded educational research (Patel, 2015), the tendency to come to a space with the aim to "transform" its current infrastructures by infusing new elements and tools, demonstrate progress under the conditions of unusual investment, and leave without ensuring local sustainability. This paper calls for expanding and complicating the philosophical and material assumptions with which we conduct studies of learning, from abstract and linear (e.g., how do we technologically scaffold this complex task?) to local and liminal (e.g., how is learning in this particular space with these participants entwined with other material, political, and social histories and trajectories?). Assemblage theory can serve as a useful ontological shift for this kind of analysis, as we begin to see everything in the process of reassemblage, as contingent and shifting, difficult to predict and impossible to guarantee. My hope is that the concepts I propose here can do some work to both recognize the creativity of teachers and students working in liminal and precarious conditions, and to interrupt and slow down the many short-sighted and "placeless" partnerships of education research. Perhaps asking the questions, "how can we make sure that after our work here ends, we don't just leave our innovation debris?" or "how can we first invest in ongoing relational infrastructure that understands and harmonizes with the existing culture of the space?" can lead to some generative reconsiderations for design, research, and collaboration work.

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