LEARNING TO BREAK THE LOOP

by

MELISSA CAMPANELLA

BA, New York University, 2011
MA, University of Colorado-Denver, 2013

A thesis submitted to the
Faculty of the Graduate School of the
University of Colorado in partial fulfillment
of the requirement for the degree of
Doctor of Philosophy

School of Education

2024

Committee Members:
Ben Kirshner
William R. Penuel
Shelley Zion
Carlos Hipolito-Delgado
David Boromisza-Habashi

DEDICATION

To all my family and all my teachers.

**Abstract**

In this three-article dissertation, I use the sci-fi metaphor of breaking time loops to develop theory and practical knowledge about designing toward new, more just futures in times of "history repeating itself". I explore three contexts for learning and development 1) a youth participatory action research project working to uphold its Freirian values around knowledge co-construction as the partnership grew from tens to hundreds of contributors 2) a Research Practice Partnership in science education attempting to enact ideas about good pedagogy in its internal partnership meetings, and 3) the efforts of a self-organized political coalition to support community members to deliver personalized testimony in favor of intersectional social studies standards that had come under right wing attack. Drawing on sociocultural theories for learning and using a variety of methods, I worked to make a difference now to the groups that I studied. Across the cases, enacting our ideas about action, change, and justice meant working to expand participation in the face of power differences.

## Table of Contents

## List of Tables

## List of Figures

## I. Introduction: Learning to Break The Loop

By Melissa Campanella

"*I am experiencing* nIb'poH*, the feeling I have done this before.*"

- Lt. Worf to fellow senior officers

"*You'll do better on the next go round.*

*You have to.*"

- Commander Stamets to Specialist Michael Burnham

I am a *big* nerd. Tuning into Star Trek weeknights and X-Men Saturday mornings on our old cathode ray tube TV was part of my moral upbringing. I watch, read, and geek out on sci-fi for enjoyment, but also to help me perceive my own reality anew.

Across nearly all my favorite fictional universes, there's a genre of story where the characters get caught within, and have to break free from, a time loop. In such a loop, the characters live through the same sequence of events over and over again as a period of time is repeated.

In Trek, the loops have a variety of origins. Sometimes they are caused by naturally occurring space time "anomalies" or simple accidents, like the starship Enterprise's collision with the U.S.S. Bozeman in the *The Next Generation* episode "Cause and Effect." Other times they are designed and initiated on purpose, like those configured by conman Harry Mudd with the aid of a Klingon time crystal and a 4 dimensional entity in *Discovery's* "Magic to Make the Sanest Man Go Mad."

From all my history watching and reading sci-fi, I can discern some general principles for breaking free from a time loop:

1. First, raise the alarm. (Or listen to, and believe, someone who already is!) Let the crew know what is happening.
2. Next, pay close attention to what is going on and test out ways to intervene and change the flow of events.
3. Then, ensure a message is delivered when the loop begins again -- pass on a reminder of what is happening, and an idea for what to try next.

Since science fiction is often a metaphor for social issues and real events, it's unsurprising that I find the time loop to be a fitting analogy for our own universe. We perhaps aren't *literally* experiencing the same chunk of time over and over again, but we are certainly living through events that parallel the past and present themselves as premonitions. And like in Trek, some of the most insidious loops -- the racism, ableism, homophobia, transphobia, xenophobia, and more -- have been engineered, deployed, and repeatedly reset, even if the engineers are nowhere to be found (cf. Bonilla-Silva, 2003). Scroll through a social media timeline, and you'll see snapshots of time loops plastered on the digital wall like so many overlapping, wheat-pasted posters on a city block.

Back to the rules of breaking a time loop -- It seems necessary, too, that the loop be set on a new trajectory from *inside* it, by actors trapped within it taking chances, failing, and trying again. As Garcia & Philip (2018) observe, "equity does not simply exist aspirationally beyond the present moment but must emerge from within it" (p. 340). As a nerd, a scholar, a daughter, sibling, friend, colleague, a partner, (and to most, a stranger, or I hope, a good neighbor on earth) I wonder, how might I/we better heed messengers, pay closer attention to where and how to might intervene, and use designs and iterations to get out of loops? How might I/we send messages on or back to myself/ourselves?

I acknowledge that escapes from loops are not easy. Once we escape a loop, we may find ourselves in a new one. We know that linear progress is a myth (Foucault, 1920, Coates, 2015, Zinn, 1980), and critical race theory asks us to reflect continuously on the permanence of racism (Bell, 1980). But any progress at all demands we try, linear or no.

These are really big wonderings, and my dissertation is comparatively small. I'd like to think of each study as a small attempt to disrupt the flow of events, and each article as a quick message from this loop into the next, in hopes that with each iteration we collectively come closer to breaking free. It is my hope too, that the dissertation itself serves as an invitation to anyone who reads it to try their own hand at breaking a loop.

**My Research Perspective**

I am becoming a learning scientist. I resonate with the learning sciences' concern with learning and development across multiple scales (Weis & Fine, 2012; Penuel, 2020) and love having the chance to imagine and support the design of learning environments (Design Based Research Collective, 2003; Barab & Squire, 2004; Campanella & Penuel, 2021). As a student of sociocultural perspectives on learning, and Community Based and Design Research methods (Cobb et al, 2003; Bang et al., 2016), I share a commitment to usefulness, bringing about new possible futures (Gutiérrez & Jurow, 2016; Gutiérrez et al, 2020), and a belief in the power of designs inspired by "small t" theories (Poynor, 2004), to make big changes. I aspire to a pragmatism with teeth (Hildreth, 2009), I feel the weight of needing a new world now, and long ago. I use the fear and the love I have for people and my home planet to give me courage and perspective and to sustain my own learning through mistakes.

As a graduate student researcher, I have contributed to several large research-practice partnerships over the last six years that work primarily at district, state, and national levels of civic and science education systems -- The Critical Civic Inquiry project, inquiryHub and

OpenSciEd, and Advancing Coherent and Equitable Systems of Science Education (ACESSE). The research I support in these projects focuses on youth sociopolitical development and transformative student voice (Kirshner, et al., 2015; Campanella et al, 2021), the co-design of NGSS aligned curriculum and assessment that attends to student interest and identity (Penuel et al, 2022; Penuel et al, 2017), and equity and coherence in state level systems in science education (Penuel et al, 2018; Wingert et al, 2020).

While I am often working with others at macro levels of systems, I also spend a lot of time thinking about how to use theories and research approaches from those settings, along with advocacy and activism practice knowledge I've learned over the course of my life, in *micro* contexts, like text conversations with my cousins, to intervene in my own behavior, or to shift relations in my workplaces. Each article in this dissertation has a slightly different twist on a simultaneous focus on micro and macro scales of design, action, and learning (Rogoff, 2023).

I think research that starts from the assumptions that those most impacted by a problem know best (Spivak, 1988) and that learning is cultural (Nasir et al, 2020). Aa dedication to political clarity and trust (de Royston et al, 2017) and an attention to historicity (Bang et al, 2016) can help people (and has helped me) to cultivate a sense of *kairos*-- that awareness of the right, critical, or opportune moment to act, which Freeman & Jurow (2018) describe as the ability to notice and "act freshly" in ways that are "optimally disruptive" (p. 3). Beyond aiding in sensing those opportune moments to act, I believe these approaches to research can support creative thinking about what to try next (design) to disrupt oppression's repeating patterns, clarify what message to send along, and how to communicate it.

**The Three Articles**

**Article 1**

Community Engaged Research (CER) aims to intervene in loops that shape University relations with community partners in ways that position researchers as "knowers" and "experts" and obscure, deny, or claim community knowledge as their own (Gordon da Cruz, 2017; Tuck & Yang, 2014). While much of the CER literature focuses on the efforts of small groups of a few researchers and community partners (e.g. Cammarota & Fine, 2008; Sandwick et al, 2018), less is known about flattening hierarchies of knowledge co-construction in university-community partnerships that have hundreds of contributors.

Article 1, Co-Constructing Knowledge for Action in Research-Practice Partnerships, is a collaborative piece co-authored by members of the Critical Civic Inquiry (CCI) Research Group and partners in Denver Public Schools' Student Voice and Leadership (SVL) Program. In it, we draw on the concept of prefigurative experiments (Breines, 1989; Lyn, et al., 2016) to reflect on and learn from an initial attempt to restructure collaborative knowledge building in our partnership, which over the last 15 years has transformed from smaller scale collaborations between the research team and a few educators and their students, to a role focused primarily on documenting the youth research and policy development projects at more than 20 district schools. We wondered —in an RPP with hundreds of contributors playing unique roles– how can we stay true to our Freirian commitment to knowledge *co*-construction, vs resetting to a banking model of presenting findings to practitioner partners? In this paper we report on an initial attempt at doing so, what we learned from the mis/alignments between our desired ends and ultimate means (Yates, 2015), and how the experiment in new ways of doing things has "moved us to act" going forward (Fine, 2008).

**Article 2**

Inspired by conversations with colleagues, mentors, and by calls from the height of the 2020 racial justice uprisings that schools, corporations, and employers of all kinds to walk their talk on racial justice, Study 2: Coherence, Relevance, and Contribution in a Science Education Research Practice Partnership Meeting is about closely observing the sociocultural life of a specific group as it worked to bring its internal lab culture into greater alignment with its outwardly expressed commitments to epistemic justice in science education.

In this study, I use Schwartzman's (1989) approach to studying meetings to understand how a Research-Practice Partnership (RPP) I am part of, the iHub partnership, is working to "clean up [its] own house". Focusing on how the group's communicative practices in the RPP bimonthly meeting allow the group to create, recreate, and evaluate the social system and relationships within the team, this study aims to build a multi-voiced account of the partnership's inner workings and, through a thick description (Geertz, 1973) of existing practices, identify opportunities for transformation.

**Article 3**

Although there has been growth in research about trajectories into youth activism, we know less about the learning process for adults who become involved in social justice activism. As learning about race, gender, labor, and more again comes under attack in the latest Conflict Campaign in Education (Pollock et al, 2021; Kumashiro, 2021), better understanding how adults and self organized groups learn to take action is key to intervening in loops of progress followed by swift and organized massive resistance.

Study 3, Making An Action Toolkit "One's Own" in the Movement to #RestoreTheRevisions to Colorado's Social Studies Standards, draws on Wertsch's (1997) concept of mastery and appropriation of cultural tools to understand how an ad-hoc coalition of

actors appropriated language from a virtual action toolkit in their successful campaign to resist right wing attacks on the state's social studies standards revision process. For this analysis, I consider the #RestoreTheRevisions toolkit (Appendix D) as a *cultural* toolkit (Swindler, 1986), that is, a "repertoire" of cultural resources, for example, language, styles, beliefs, and skills, from which people construct "strategies of action" (p. 273). Through an analysis of linguistic and extralinguistic choices made by toolkit users when delivering public testimony, I trace how toolkit users did more than just repeat or master toolkit talking points when delivering public testimony before the school board. Instead, they personalized and transformed toolkit language, imbuing it with their own perspectives, meanings, and evaluative orientations (Lemke, 1998). This study responds to legitimate concerns about over reliance on scripted messaging in social justice activism by developing theory about how users of scripts personalize or appropriate them, and theory about the design of virtual action toolkits to support personalization and appropriation of such tools.

Okay. It's time to go. Engage!

## II. Co-Constructing Knowledge for Action in Research Practice Partnerships

By Melissa Campanella [1], Ben Kirshner [1], Joanna Mendy [1], Laura-Elena Porras-Holguin [1], Monserrat Estrada Martín [1], Magnolia Landa-Posas [2], Katie Terrazas Hoover [2], Solicia Lopez [2]

[1] University of Colorado Boulder

[2] Denver Public Schools

(article for *MDPI Social Sciences Journal Special Issue: New Trends in Community-Engaged Research: Co-producing Knowledge for Justice* edited by Dr. Steven McKay and Dr. Claudia Lopez)

On a Wednesday evening in February 2021, a group of high school students, university students, professors, and educators came together over Zoom to analyze qualitative data. COVID-19 rates had soared the previous month; school had been "virtual" since March of 2020, and it felt like online meetings had become the new normal. The convening was an opportunity for the university research team to share emergent findings with student participants in a district-run social justice youth program called Student Voice and Leadership (SVL). The research team, called Critical Civic Inquiry (CCI), had selected excerpts from interviews and field notes that spoke to two topics developed based on suggestions from SVL educators and student interns: how veteran students mentor new team members and how students navigate pushback from adults when engaged in activism.

One of the excerpts was a student's story about her effort to persuade a school resource officer that he should not park his police car on the sidewalk in front of the school's entrance. In the interview, the student recounted the discussion with the officer who visited her SVL class after students had spoken up about the issue:

> I brought up the fact that not all students feel safe. Not all students consider a person in uniform as, you know, "safety". And he didn't like that, and I told him

> that like—"I understand your need to come here and validate yourself, but you need to understand that we're not targeting you. We're targeting what you represent. We're…addressing what you represent. And what this means to students of color and the…negative experience that they've had with police officers, and how sometimes you reinforce that, that already pre-established idea of the cops." And he didn't understand where we were coming from. And he left thinking that we would never bring it up again. That he had established authority…and then nobody was going to question him again. Except the fact that we still believe what we believed before and despite him being there and telling us all these negative things about our community and how [name of school] is a "high-risk" school and labeling us as basically "deviant," and how, you know, we're not like "great students." That discussion for us reinforced the fact that, you know, that we need to speak up for ourselves or else nothing's going to happen.

After the students had read the excerpt, the university breakout group facilitators asked, "What strategies did the student use to persuade or find common ground with the SRO?" The first respondent said, "I liked how a student stood up for their peers, even if it didn't go so well." The second said they were inspired by the "bravery" demonstrated by the student in the interaction.

As we elaborate later in the paper, these responses showed how necessary and valuable it is to co-construct meaning about data alongside young people. Whereas the research team's initial interpretation focused on an analytic word—"strategies"—the student responses focused on the relational and emotional dimensions of the interaction. The student comments underscored how important it is that research about transformative student voice attends to the embodied, relational, and emotional dimensions of student experience, especially given the stakes when young people are challenging adults with positional authority (Fox, 2015).

This example of collaborative meaning-making with SVL students is part of a broader research practice partnership (RPP) between CCI and SVL. During the 2020–2021 academic year, SVL included four professional staff, more than 25 teachers, and around 250 high school students from 23 schools. Although the research team and professional staff had worked together

for several years and developed a sense of mutual trust and accountability, the research team did not necessarily have the same deep relationships with the students and teachers or ongoing routines to look at data together. In community-engaged research (CER) projects such as this, which have a clear division of labor between researchers and community partners, how can we still design opportunities for meaningful sense-making and co-production of knowledge to inform praxis?

This question is important for the CER field because the CER literature, especially in education, tends to focus on projects carried out by relatively small or bounded collectives, such as in Critical Participatory Action Research (Cammarota & Fine 2008; Sandwick et al., 2018). It is sometimes the case, however, that community-engaged research, even when the political aims are shared, relies on a more pronounced division of labor, where university researchers carry out data collection and analysis in the service of activist and educator projects, such as the research used to support community organizing for police-free schools (Center for Popular Democracy, 2021) or research to document the achievements of an equity initiative in a school district (McKinney de Royston et al. 2017; Vakil et al. 2016). Of this latter form of CER, it is typical that the primary "community partners" for that work are senior staff or executive leadership and that the other key members play more secondary or peripheral roles (e.g., Kirshner et al. 2018; Oakes & Rogers, 2006). This kind of division of labor may be advantageous for large scale projects or in cases where community partners say it works best for them (Oakes & Rogers, 2006). Although not reaching the same heights of democratic participation found in Critical or Youth Participatory Action Research (CPAR and YPAR, respectively), partnerships such as these are still important for CER praxis; they offer their own opportunities for critical and collaborative knowledge production for social change.

After providing background on our partnership and the reflective process we used to write this paper, we organize our claims for this reflective paper into two parts. Part I analyzes the process by which the university research team (diverse across lines of age, gender, race/ethnicity, class, and education degree) worked together to identify emergent claims to share with students and teachers. We draw on the concept of *prefiguration*, which Boggs (1977) described as ongoing efforts to embody within a movement "those forms of social relations, decision making, culture, and human experience that are the ultimate goal" (p. 100). We argue that the research team attempted to enact, in their work with each other, the intended end goals of our RPP—democratic knowledge construction for justice that attends seriously to power and positionality. Collaborative practices *prefigured* the ways we wanted to work with students and teachers.

Part II identifies lessons from two online sessions where the research team facilitated collaborative meaning-making about excerpts from field notes and interviews. We argue that these sessions, although incomplete and inadequate on their own, show evidence of the expanded insights gained through analyzing data with students and teachers. Even in CER projects with a division of labor between researchers and participants, where opportunities for co-production of knowledge are more limited than CPAR or YPAR, it is still possible to generate new knowledge and insight. As we discuss in our conclusion, these insights have also mattered for our partnership, where we are in the middle of designing and enacting new practices that build on lessons from these sessions.

Our paper is authored by a team of eight people, comprising SVL staff (Lopez, Terrazas Hoover, and Landa-Posas), a graduate student (Campanella), three undergraduate students (Mendy, Porras-Holguin, and Estrada Martín), and a university professor (Kirshner). As is

common when writing about community-based collaborative research, selecting pronouns is challenging. We generally use the pronoun "we" to refer to the whole group of authors, but when we need to be more precise, we denote either the CCI research team or the SVL team, or specific members of each, in the third person.

## Key Concepts

### Prefiguration

Prefiguration can be broadly conceptualized as the efforts by groups and movements to enact desired futures today (Boggs, 1977; Breines, 1989; Polletta, 2002; Alexander, 2005) and in so doing "'inspire' change" (Yates, 2015, p. 19). Though sometimes invoked in race-evasive ways (Annamma et al., 2017), such as the class-centered rhetoric of the Occupy Wallstreet movement, scholars of women-of-color feminist praxis and queer theories have reinterpreted the idea with attention to intersectionality and power, orienting toward possible futures, rather than nostalgia for romanticized and ahistorical pasts (Lin et al., 2016; Uttamchandani, 2021). Everyday people prefigure as a means for survival (Lin et al., 2016).

Prefigurative work has also been taken up in the design of collaborative research for action among community-engaged learning scientists (Uttamchandani, 2021). Gutiérrez, for example, developed the term social design experiments to conceptualize research projects that intervene to ameliorate historical injustices and organize more just futures (Gutiérrez 2016; Freeman & Jurow 2018). Vossoughi and Booker (2017) call for research on learning that is centered on the "lived dynamics and complexities of prefigurative activity" where "social actors are making everyday and moment to moment efforts to express the deeper *ends* of their shared activity in the *means*, working to craft new relations in and through the process of enacting possible worlds" (p. 228, emphasis in original). Similarly, although not using the same term, the

Right2Learn Dignity Lab has made this concept central to its efforts, in that they are purposeful about treating each other with the dignity that they are trying to make central to teaching and learning in public schools (Espinoza, 2021; Espinoza & Padilla-Chavez, 2021). Drawing on this work, we use the idea of experimentation in this paper to refer to an "experiment in" new ways of living out our values and learning through the process, not "experimenting on" students and communities in extractive or destructive ways (Smith, 1999; Patel, 2015).

Although we did not have the language of prefiguration when starting out, we aimed to embody the values that animated our larger partnership while preparing for and carrying out the 2021 sessions with the SVL students and teachers. Describing our work as a prefigurative experiment allows us to reflect and act on the mis/alignment between our means for co-constructing knowledge within this attempt and our vision for collaborative knowledge and future building as a partnership. We see prefiguration as one part of building more just futures that by itself is not sufficient to overturn hegemonic systems of oppression (Bookchin, 1995; Breines, 1989; Gordon, 2017) but which nevertheless helps us to make progress.

**Politicized Care**

A core element of our experiment in living our values was to show care for each other along the way. Relationships of care among students and educators are central to educational theorizing (Antrop-González & De Jesús, 2006; Noddings, 1992; Valenzuela, 1999). Recently, scholars have argued for notions of care to be situated more explicitly in a political context, in ways that have implications not just for teacher–student relations but also community-engaged research collaboratives. McKinney de Royston et al. (2017), for example, describe the way Black educators demonstrated a politicized care for Black students that stemmed from political clarity (Beauboeuf-Lafontant, 1999) about institutionalized oppression, affirmed the students' potential,

and was “physically enacted in real-time interactions” to disrupt inequitable and uncaring systems (p. 8).

In a related line of scholarship, Vakil et al. (2016) discussed two cases that illustrated the formation and persistence of politicized trust in university community relations. In one, university researchers gained initial solidarity through their shared identity as Black educators committed to developing emancipatory programming for Black students but had to work to maintain trust when the natural arc of the research fell out of alignment with institutional timelines and needs. In the other, solidarity between the white researcher and the Black and Latinx students was fragile but stitched together by shared commitment to the political aims of the project. The cases show how trust is not merely an interpersonal accomplishment or the product of good intentions but tied to shared risk-taking and political solidarity. Working to enact politicized care in the CCI and SVL teams’ relationships and systems for collaboration, knowledge building, and decision making was particularly important for us as a multi-age, multi-class, and multi-racial group living and working through multiple and overlapping crises in 2020, which impacted members differentially.

**Co-Construction of Knowledge**

The practice of the collaborative construction of knowledge among university researchers and community members has several lineages. In what Wallerstein and Duran (2018) refer to as the Northern tradition (more typical in Europe and North America), participatory research in private industry or the education sector aims to make systems more efficient by enlisting insiders who are closest to a problem to help identify solutions. Student voice programs, for example, are sometimes justified using market-based language and metaphors of the student-as-customer. In contrast, approaches to collaborative research influenced by approaches from South America,

South Asia, and Africa situate knowledge production in the broader social change projects and critiques of Eurocentric knowledge regimes (Cammarota & Fine, 2008; Fals-Borda, 1987; Patel, 2015; Reyes Cruz, 2008; Smith, 1999).

The partnership between CCI and SVL is organized around the latter rationale for co-constructing knowledge, particularly regarding Freirean commitments to critical pedagogy, praxis, and the essential role of people experiencing oppression or inequality in developing new critically conscious understandings (Freire, 1970). Working in this more critical tradition of community-engaged research, Gordon da Cruz (2017) identifies specific questions that research collectives should ask of themselves about the knowledge-construction process. Gordon da Cruz suggests, for example, that teams ask, "are we authentically locating expertise?" and to consider if they are "privileging the expertise of members of marginalized communities on their own lives" (p. 373). This commitment to an open and democratic approach to meaning making is supported by Hill Collins' (2000) articulation of Black Feminist Epistemology, including lived experience as a criterion for meaning, the use of dialogue in assessing knowledge claims, and caring relations.

These three ideas—prefiguration, politicized care, and co-construction of knowledge—offer language to understand and convey the story of our partnership efforts last year. The concept of prefiguration, anchored in politicized care, evokes how the CCI team aimed to develop relations internally that practiced the kinds of meaning-making and interpersonal relations that we sought to achieve more broadly within the research practice partnership. Critical conceptions of knowledge construction, which decenter the positional role or degree level as a criterion for expertise and re-center lived experience and insights from experiences of

marginalization, are woven throughout the process of knowledge construction for action, both within the CCI team and in the collaborative meaning making with students and teachers.

## Organizational Background

### District Partner Program

SVL is an initiative within Denver Public Schools (DPS), rooted in education liberation for students and teachers in an effort to transform and rethink education. The initiative, which has evolved significantly since its origins as a district-wide student council, centers students' beautiful and precious knowledge, leadership skills, team building, policy-development, and opportunities for action. SVL is funded by the district, with supplemental funds from grants and donations. Student-facing programs include Challenge 5280, Student Board of Education (SBOE), Young African American and Latinx Leaders (YAALL), and the Superintendent Student Cabinet. Additionally, SVL runs adult-facing professional development programs for educators involved in Challenge 5280, individual teachers implementing this work in their academic classrooms, and whole schools working to integrate student voice throughout their buildings. Although specific programs vary, work with students tends to follow a participatory action research cycle: students draw on lived experience, critical reflection, and systematic inquiry to develop more just and student-centered education policies. All of this is conducted in close partnership between students and adults.

During the time of this writing, SVL was led by three staff members, based in the central district office, who utilized an organizing model to build community and power among students. SVL's SBOE currently operates in 23 high schools throughout the district. Each school-level SBOE team can have anywhere from 5 to 30 students involved. Within that group of students, two to three act as "representatives" who co-lead their team with a teacher or counselor, who is

called a “Coach”. The following example of one SBOE team illustrates the approach, praxis, and framework of SVL.

**An Example: Students Lead the Reunification of Moraga High School**

In the fall of 2019, SVL staff joined one of the Moraga Campus SBOE meetings. The SBOE team representing “Moraga Campus”, made up of Moraga Leadership Academy and Moraga Early College, talked about how the co-location of their two schools did not allow for community spirit or school culture to flourish. Prior to 2019, there was only one coach from one school running the SBOE team at the campus, which made it difficult to engage in conversation related to co-location. Once two coaches, one from each school, paired up to recruit and work with students from both schools, they were able to strengthen dialogue around the issue of co-location from the perspectives of both schools. As the year went on, student conversations transitioned toward the root problems caused by the campus’ division into separate schools, such as the lack of resources and limited course variety. With the help of their coach, the students learned the history of the 1969 Moraga High School Blow Outs, a series of massive student-led walk outs and marches to protest the racist treatment of Chicanx students at the school that were met repeatedly with violent suppression by Denver Police. Braced with this new knowledge of the strong student advocacy that once existed in their school hallways and how crucial the school had been to a sense of community in the region, the students sought to gain buy-in for the reunification of their schools from the broader student body, teachers, school leadership, alumni, and families. They administered surveys and held community conversations with each of these groups and analyzed the themes that emerged. Equipped with their research, they developed a reunification plan and shared it with district leadership. In 2020, the DPS Board of Education

announced that Moraga campus would be reunified. Renewed student activism was a contributing factor in this decision.

This effort, led by student leaders with guidance from adults, illustrates the fluid and ongoing nature of SVL's work. SVL's programming follows a school-year cycle, but SVL is intentional in supporting students to pass the torch to the students coming behind them and in encouraging adults to patiently let the work unfold on the students' time, without usurping power. This story also speaks to the liberatory pedagogies and Indigenous epistemologies that SVL holds dear. Only after students had inquired into the root cause of their issue, looked back to their community history, and solicited the views of community members were they able to develop a lasting solution.

**Research Group**

Dr. Shelley Zion, Dr. Carlos Hipolito-Delgado, and Dr. Ben Kirshner have collaborated with community educators, classroom teachers, and students since 2010 to develop a set of curricular resources called Critical Civic Inquiry (CCI). CCI, drawing on the frameworks of YPAR, anti-racist education, and sociopolitical development (Akom et al. 2008; Irizarry 2011; Torre & Ayala 2009), emphasizes five practices, summarized in Table 1.

CCI is used by SVL and aims to center the life experiences, funds of knowledge, and aspirations of marginalized and minoritized youth, while also creating opportunities that expand their knowledge and skills as leaders and agents of change (Kirshner et al. 2021; Paris & Alim 2014; Watts & Flanagan 2007; Zion 2020). Research about CCI has documented young people's agency and activism to transform their schools and the work of skillful teachers who facilitate opportunities for students to discuss issues such as racism and xenophobia and develop sophisticated policy proposals (Hipolito-Delgado & Zion, 2017; Kirshner, 2015).

**Table 1.1 Critical Civic Inquiry Principles**

| CCI Principle | Description |
|---|---|
| Sharing Power | Educators work to learn about young people's lives and the kinds of knowledge they develop outside of school; they engage students in shared decision-making and planning. |
| Critical Questions | Educators invite students to discuss topics that connect academic content to issues of race, ethnicity, power, and privilege. |
| Participatory Action Research | Students study an issue that affects them directly and develop policy solutions. Students learn how to collect and analyze original data, such as through interviews, surveys, or archival research. |
| Public Audiences and Impact | Students formulate an evidence-based policy argument that they share with external audiences. |
| Youth-Adult Partnerships | Schools and districts adopt youth-adult partnerships to implement changes proposed by students and catalyze new ideas and planning. |

## Origins of the Partnership between SVL and CCI

The partnership between SVL and CCI is rooted in relationships. Community is the special ingredient. It started when Lopez was introduced to Kirshner by a graduate student and non-profit executive director named Ginnie Logan. Initially, Lopez was not interested in meeting with Kirshner or learning more about PAR. She was protective of the work she was leading in the district. She had limited experience with researchers, and the experiences she did have had not been positive. It took some convincing before Lopez agreed to meet with Kirshner to discuss a possible partnership. Once the connection was made, an organic exchange transpired. Lopez explains:

> Over time we came to see how our partnership embodies critical values that allow us to build trust and operate as a team. We collectively practice transparent communication and respect our roles. Our researcher partners do not position themselves as superiors, but as thought partners. They offer feedback and input, share expertise, knowledge and resources, space, and community. They embed their work in our strategy. It is a shared learning space that uplifts the work.

SVL staff and CCI researchers, beginning in 2017, worked closely to strengthen and sustain a transformative student voice in the district, write grants, and share knowledge with broader publics. Lopez and Kirshner, for example, have given presentations about the work at national conferences and grantee convenings. In August 2021, SVL staff and CCI researchers presented the SVL model and research findings to the district Board of Education. Other members of the CCI team work closely with counterparts in SVL to collaboratively design and lead teacher professional development or, as part of their ethnographic research at a subset of schools, help students develop survey questions.

In these ways, the work that we do together embodies the kinds of relationality, trust, and mutual accountability called for in critical community-engaged research (Patel, 2015). At the same time, we must ask ourselves: where are the SVL students and teachers in this collaborative work? They, too, are members of SVL; they challenge school decision makers and advance justice projects at their schools. How might we do a better and more systematic job of co-producing knowledge for action with them? Questions such as these motivated us, in the summer of 2020, to step back and pause. CCI researchers had recently completed two years of data collection about teaching and learning in SVL and wanted to analyze the data in ways that were accountable to SVL students and coaches. We wanted to share the initial findings that would be of interest or use to students and coaches and engage them in collaborative meaning-making.

**Co-Constructing Lines of Data Analysis**

In early September 2020, Porras-Holguin and Campanella met to brainstorm questions that would guide their analysis of the data during the coming year. They sought out feedback from SVL counterparts about promising lines of analysis. The SVL staff and two student interns expressed support for the general idea but pushed the CCI researchers to clarify and bring out the

political dimensions of the research questions. SVL staff, students, and coaches were active in racial justice organizing; the meeting took place just a couple of months after the height of the summer 2020 uprisings. SVL students had played pivotal roles in a coalition that led the school board to end its contract with the city police department in July 2020.

SVL staff wanted the CCI researchers to look for examples where students dealt with pushback from adults protecting power or resisting system change. One student intern asked in the chat, "My only real question/comment is how are we leveling the playing field when it comes to student and adult partnerships? and what does that look [like] in real time and relationships?" SVL staff noted that some educators labeled some SVL students as too political or as troublemakers. In addition, a new question was raised by the same student intern around care practices. She wrote in the chat, "as an activist, self care was always an afterthought, how can i keep doing this work as much as I can as best as I can?" Ultimately, the group landed on the following questions to guide systematic analysis:

1. How do teams go about mentoring new students/bringing new students onto the team?
2. What tactics have been effective for making school level changes? How do teams deal with pushback from adults? (In particular, how to deal with pushback about "being too political".)
3. How are SVL students taking care of themselves as they engage in activism?

The SVL staff and students' pushes to make explicit the political and felt dimensions of the questions underscores how the framing of research questions is itself important to the collaborative construction of critically conscious knowledge (Gordon da Cruz, 2017). Workshopping and then revising draft questions with the SVL staff and student interns got us closer to these kinds of processes. We note, however, that we fell short of engaging a more representative group of students in finding out what kinds of questions would be most interesting to them to explore.

## Methodology for This Paper

This paper is not a conventional research study. As with many participatory research projects, our analysis blends reporting on our findings with reflecting on our process (Lac & Fine, 2018). Our aim is to contribute to community-engaged scholarship by going "behind the scenes" to describe how we set up collaborative routines and designed sessions with students and coaches and by inviting the CER community into dialogue as we wrestle with the tensions and opportunities facing RPPs such as ours, which have hundreds of contributors playing unique roles.

**Who We Are**

We believe research is made more rigorous by a scholar's conscious reflection on their closeness to and distance from the work (Nzinga et al., 2018). Each author on this paper is "close to" and "distant from" the work of our partnership in some way. To make this more transparent to readers and each other, we share brief background information about the authors below and weave into the narrative some of the experiences and perspectives we brought at this point in our lives.

**SVL Staff.** Solicia Lopez is an Indigenous Chicana rooted as an educator, activist, and community leader. She is building her legacy on growing others and investing in her community. She was raised and educated in Denver, attending Metropolitan State College of Denver for her undergraduate studies and Regis University for her graduate studies. Magnolia Landa-Posas is a Mexican and Chicana educator. She was born and raised in Aurora, Colorado and attended the University of Colorado Boulder, where she studied ethnic studies and education. Her work is grounded in educational justice, liberatory pedagogies, and the belief that every single student holds precious and beautiful knowledge. Kathleen (Katie) Terrazas Hoover is a Chicana-Mestiza, born and raised in Northwest Indiana, just outside of Chicago. Her experiences growing up in a

highly segregated area among working-class families raised many unanswered questions in her youth but ultimately seeded her commitment to work towards racial and class justice. Her praxis focuses on understanding and creating educator learning communities, experiences, and curricula that support educators' roles as critical change makers in deep partnership with youth for education justice.

**CCI Researchers from CU Boulder.** Monserrat (Monse) Estrada Martín is a first-generation, Mexican-American, gender-neutral person from the Denver Metro area. Estrada Martín majors in Evolutionary and Ecology Biology with minors in Leadership, Computer Science, and Public Health. Laura-Elena Porras-Holguin is a first-generation Latina college graduate who studied sociology at CU. Her goals focus on giving back to the Latinx community and expanding her knowledge on community outreach and self-advocacy for underrepresented groups. Joanna Mendy is a Gambian-American student from Aurora, Colorado. She double majors in Political Science and Sociology, with a minor in Leadership Studies. Melissa Campanella is a cis-white female Denver Public Schools graduate and former teacher and was involved in the 2011–2012 school year CCI teacher cohort. She came to care about justice and activism early in life while observing how she was constructed as "gifted" while her disabled brother Christopher was constructed as "disruptive" in school. Ben Kirshner is a white male teacher and researcher whose commitments to supporting youth voice and activism were catalyzed by his work as an educator in youth organizations in the San Francisco Bay Area. He prioritizes relationships in his research and values opportunities to participate in multigenerational and multiracial collectives that use research to advance social justice change.

**Data Sources**

Our claims in this paper are based on group analysis and individual reflections about the process we began in September 2020 to analyze data and generate findings that could be useful for students and coaches. Our primary data are internal meeting notes, data analysis memos, and presentation slides that were shared with and annotated by students and teachers.

The detailed meeting notes enabled us to reconstruct and reflect on our process for the narrative section of this paper. They document planning, decision making, reflections, and analytic discussions, including records of who said what. Campanella also periodically created reflection tables where each participant wrote their thoughts in separate rows and then annotated each other's responses with comments in the margins, modeled after a similar process she participated in with a different RPP (Penuel et al., 2022). The notes also branch out to linked workspaces, such as Google sheets and slides, where we iterated on codebooks, claims, and participation structures for sessions with students and coaches. The records of our virtual meetings with secondary partners include the comments and annotations that the students and coaches added to slides and documents.

**Process of Analysis and Writing for This Paper**

Analyzing and writing about the process was not linear. We find Gravemeijer & Cobb's (2013) notion of *mini and macro cycles of analysis* in Design Based Research to be a useful framework for describing our process. *Mini cycles* occur during a "prototyping phase", where initial assessment of an intervention drives iteration on shorter time scales (e.g., day-to-day, week-to-week, and month-to-month), while *macro cycles* are opportunities for reflecting back on the intervention as a whole, often culminating in recommendations for future improvement of the intervention (p. 15).

Our *mini cycles of analysis* occurred during the 2020–2021 school year as we were carrying out our prefigurative experiment in knowledge co-construction and included week-to-week research team meetings, targeted feedback and planning meetings with SVL partners, and post-session reflections. Part of our routine during these meetings was to discuss how the process was going and what we were seeing in the data. **Section 5** includes examples of these conversations. *Macro cycles* occurred in the fall of 2021, after the conclusion of the initial prefigurative experiment, and included a series of overlapping moments of shared meaning-making and collaborative writing. These reflections included an element of looking back at and making sense of the initial experiment, but also looking forward to new possibilities for collaboration, and are described in further detail in Section 6.

In response to the challenge of coordinating busy schedules, we split up into two writing groups: Campanella hosted a weekly work block with undergraduate researchers as they were available, and Kirshner facilitated several conversations with the SVL team. During each session, we continued to refine ideas and the structure of the paper, and Campanella and Kirshner met separately to coordinate those new insights across groups.

Reflective sessions with undergraduate researchers focused on looking back on how the CCI team worked together and how the group sought to recognize and leverage people's expertise. They explored the conjecture that interpersonal dynamics and a democratic approach to the collaboration of a subteam of CCI researchers offered a set of tools for co-constructing knowledge with the students and coaches. These reflections prompted a reframing of the paper around the concept of prefiguration. Analysis and writing sessions with the SVL team focused on telling the story of the SVL program and the partnership with CCI. SVL staff used the opportunity of this paper to develop new writing about the program. Just as importantly, these

meetings delved into critical reflections about last year's data sessions and how to improve upon them in the future; this group spent most of its time imagining ways to learn from the data sessions to strengthen the place for data analysis in the coming year. We elaborate in the discussion and implications section.

## A Prefigurative Experiment in Two Parts

### Part 1: Collaborative Data Analysis and Politicized Care on the CCI Subteam

The university research team of undergraduate students, graduate students, and faculty worked during the fall of 2020 to identify relevant excerpts and emergent claims to share with SVL students and coaches. In looking back at the work of this group, we realized that its work—across lines of race, ethnicity, gender, class, positional role, and academic degree—embodied practices that the team sought to achieve with students and coaches. The work of this group from September to January prefigured, in certain ways, the kinds of collaborative co-construction of knowledge that the later feedback sessions sought to accomplish. We also believe that group members demonstrated politicized care through their efforts to affirm the potential of each of its members to contribute meaningfully to the research, while simultaneously recognizing and responding to the unequal impacts of the pandemic within a university and larger social context that privileged the interests of white students and faculty. This section, therefore, analyzes the evolution of this "CCI subteam" and practices that the group developed to make sense of the data and support each other along the way.

**Assembling the CCI Data Analysis Team and Creating Norms.** The subteam of CCI researchers brought varied types of expertise to the work. Conventional metrics of expertise, such as advanced degrees or years of schooling, bore little relation to the team members' knowledge and insight about SVL or the broader issues of student activism. When the coding

process started, for example, Porras-Holguin had already worked with CCI for over a year and had completed ethnographic fieldwork in one of the schools, which meant she had a more direct understanding of current SVL student experiences than Kirshner, who had not conducted fieldwork in the SVL classrooms. Mendy and Estrada Martín, although newer to the team, brought expertise related to their study of intersectionality and social justice leadership in the University of Colorado's undergraduate Multicultural Leadership Scholars (MLS) program and used this knowledge to make sense of the data and the overall mission of SVL. Campanella, as a doctoral candidate who had completed fieldwork in two SVL classrooms, brought not just her knowledge of the SVL sites, but also seven years of secondary science teaching in the district, including one year when she experimented with CCI principles in her classroom. Kirshner's main contribution to the subteam was to draw on his prior collaborative research experiences to help facilitate a process that would offer meaningful roles and enable the team to pool its varied sources of knowledge to identify claims.

As the work unfolded, the three undergraduate student researchers, Porras-Holguin, Mendy, and Estrada Martín, prioritized commitments to justice for communities of color based on their lived experiences and work in the MLS pathway. Porras-Holguin explained this in one of the reflection sessions we held in preparation for writing this paper. For her, learning that CCI had "a similar motivation" to that of MLS "helped me say okay, they have a similar goal, students of color and student voice, if I can continue this in a different location then I'll push myself to be part of that community." It was similar for Mendy, who joined this project to support our effort to move toward knowledge co-construction with students and coaches. She said, "I wanted…to see myself and other people of color reflected in the research. That's something I carry when I do this work." Estrada Martín regularly brought their experiences as a

more recent high school graduate to bear on our work, continually returning to the affective dimension of student experiences in our data analysis.

The CCI subteam developed practices along the way that enabled the team to make progress while also accommodating the personal needs that came up during the multiple overlapping crises of 2020–2021 and which landed on each team member in different ways. They tried to develop a clear but flexible workflow. One tool they used on an ongoing basis was a "What, By Who, By When" table, where they would map out small goals, how they would divide up responsibilities, and how much time they hoped to spend on each task. During their biweekly meetings, they would check in to acknowledge how each person was showing up to the space that day. For example, they would sometimes start with "troubleshooting/getting help" or with simple, open check-ins where team members could share whatever they wanted or pass.

Porras-Holguin later reflected that these check-ins, combined with flexibility around task assignments, were an important part of how the group demonstrated care for one another, stating that "having our calendar, and at the same time, space for 'hey if you are behind, let us know, we can work things around'" embodied compassion while staying accountable to the work. Check-in conversations went beyond surface level niceties to delve into emotional and complicated aspects of their lives. This led to other important conversations and actions, such as, for example, supporting each other to navigate university policies about in-person versus remote classes given the different risks faced by members of our team and their families.

**Collaborative Development of Emerging Claims.** The CCI subteam tried to develop a way of working together that was reflexive about issues of power, privilege, and difference in the construction of knowledge. Their hope was to acknowledge and hold space for their differences, both academically and personally, and allow each researcher to develop lines of analysis that

reflected their interests and expertise. Each researcher selected their area of focus for data analysis from the questions that had been co-developed with SVL and then worked in pairs to review the data and identify excerpts. Porras-Holguin and Mendy chose to focus on the tactics students used to effectively make changes in their schools, as well as how students manage pushback from adult decision makers. Campanella and Estrada Martín opted for how students mentored new members of their school teams.

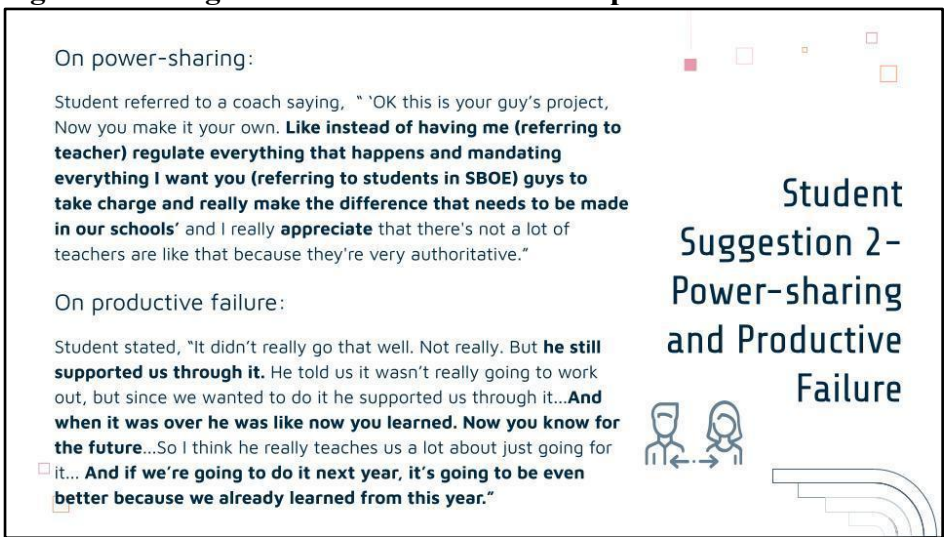
Each pair met to synthesize excerpts, document variation, and identify patterns across schools. The pairs then brought initial claims back to the CCI subteam for discussion. In these meetings, they shared overarching themes and particular excerpts that had caught their attention, then worked to summarize those themes into initial claims or hunches. Kirshner sought during these sessions to share "tricks of the trade" (Becker, 1998) from prior data analysis experiences and ask questions that would help student researchers clarify their interpretations, such as, "What I'm hearing you say is…is that what you mean?" The pairs then transformed their ideas into succinct and accessible claims that could be shared and discussed. This process enabled undergraduate members of the team to develop claims about the data, starting with initial "noticings" and moving iteratively to their later articulation with students and coaches.

To illustrate this process, we describe the evolution of one claim about the value of "productive failure" for students. It started in February, when Mendy signed up to answer a question requested by the coaches: "What advice do students offer in interviews about how schools and teachers (including coaches) can support student voice?" Kirshner created a Google spreadsheet and offered suggestions on how to review the data and identify themes. On March 4th, the first version of the claim was born, when Mendy wrote, "Letting students lead on projects/ideas, even when you as a coach/teacher know that it won't work out. Let them fail and

learn from those mistakes." She then pulled five excerpts from across school sites that best exemplified this idea.

Once Estrada Martín joined Mendy, they decided to develop this idea further. They had initially titled the section, "Let Students Lead, but not too much" as a placeholder before they wrote, "Taking the Lead: …Students should be able to take ownership of their projects and coaches should be open to letting them fail." The focus, however, was still not fully centered on productive failure, but rather classroom structure and ownership of projects. Then Mendy and Estrada Martín presented their memo to the larger CCI research team, and one of the CCI doctoral student researchers, Beatriz Salazar-Núñez, shared a phrase she had developed and written about in relation to student activism, called productive failure (Salazar-Núñez, 2020). Mendy and Estrada Martín continued to work on a way of phrasing the claim and supporting it with evidence, based on student interviews, that would be most concise and clear for coaches. They opted to select one representative quote per claim, embed relevant context into the quote, and use bold text to underscore key points (see Figure 1.1).

**Figure 1.1 Google slide with the claim about productive failure**



**Preparing for Sessions with Students and Coaches.** SVL staff put the CCI subteam on the agenda to meet with the students in February and with the coaches in April. (SVL held regular meetings with students and coaches every two weeks over Zoom). The student session focused on two topics: "supporting new Challenge 5280 members" and "navigating pushback from adults." Table 1.2 summarizes the agenda structure and prompts.

The agenda went through a few revisions in response to feedback from SVL staff and other CCI researchers, including a notable change suggested by Salazar-Núñez to start the breakout groups by asking students to share expertise about the research questions, rather than by sharing the claims that CCI researchers had developed.

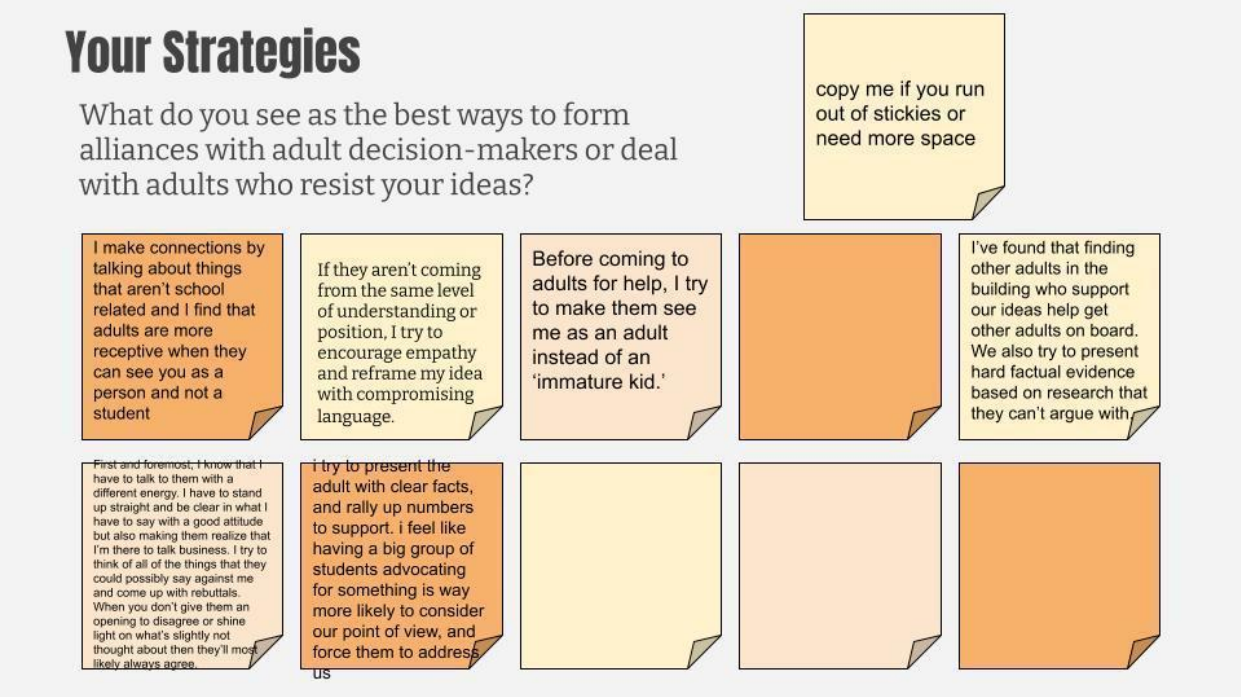
**Table 1.2 Student Session Agenda**

| Agenda Item | Breakdown |
|---|---|
| Opening (whole group) | Introduced the research team and agenda |
| Middle (breakout groups) | Students opted in to either "supporting new Challenge 5280 members" or "navigating pushback from adults."<br>*Both breakout groups*<br>Icebreaker<br>Elicited student ideas:<br>*Supporting new members breakout group*<br>Your Expertise: What do you see as the best ways to work with new team members so that they feel included and invested in Challenge 5280?<br>Your Aspirations: What might be some things you wish you could try to support new team members, but haven't been able to yet?<br>*Navigating pushback breakout group*<br>Your Strategies: What do you see as the best ways to form alliances with adult decision-makers or deal with adults who resist your ideas?<br>*Both breakout groups*<br>Read and discuss excerpts<br>Reflect: What questions do you have? What is one thing you will take to your work? |
| Closing (whole group) | Thanked everyone and invited students to respond to questions in the chat<br>Q1: What other questions would you like the CCI research team to explore in the data about SVL?<br>Q2: What was the best thing about this "report back" session?<br>Q3: What's one thing we should change about how we share research in the future? |

An example of student responses from one of the four breakout groups is shown in Figure 1.2. Asking students to first share strategies for building alliances with or dealing with adults

who resisted their ideas, before jumping into data and sharing the research team's initial hunches, helped us to better center students' wisdom and strengths in the data analysis conversation (Gordon da Cruz, 2017).

**Figure 1.2 Starting breakout groups by asking for student expertise**




The coaches' session followed a similar structure in terms of using breakout groups to look at excerpts and explore how they might inform practice. Based on feedback provided by the coaches two months prior, CCI researchers had analyzed data around two topics: "strategies for sharing power" and "student recommendations for coaches" (Table 1.3).

**Table 1.3 Student Session Agenda**

| Agenda Item | Breakdown |
|---|---|
| Opening (whole group) | Introduced the research team and session agenda<br>Reviewed survey findings<br>Described dilemmas of sharing power we have seen |
| Middle (breakout groups) | Strategies for Sharing Power<br>Listed a set of low-inference practices we documented for sharing power (e.g., students act as peer mentors, coach sets up clear routines for group decision-making) |

**Table 1.3 Student Session Agenda**

| Agenda Item | Breakdown |
|---|---|
| | Organized these discrete practices into a framework of student-centered apprenticeship, moving between "modeling inclusive and democratic leadership", "coaching," and "fading with intention"<br>Shared excerpts from field notes of SVL teams where coaches "shared power" and asked coaches to annotate these excerpts and prepare to report back on themes |
| Closing (whole group) | Invited breakout groups report back<br>Shared student suggestions about what they wanted from coaches:<br>teacher investment in the work,<br>power-sharing,<br>facilitating "productive failure"<br>Thanked everyone and said goodbye |

Leading up to each session the CCI team also ran a "rehearsal". This rehearsal changed significantly after the first session, because the CCI team was caught off guard by the number of students who participated with their video cameras off and some initial challenges fostering conversation. In preparation for the coaches' session, therefore, the CCI team took the time to surface their nervousness about facilitation and to help each other think through and practice approaches to managing anxieties and better connecting with coaches on a human level. They collaborated to generate Table 1.4, summarizing possible talk moves, as a support.

**Table 1.4 Talk moves for coach session small groups**

| Challenge | Possible Responses |
|---|---|
| Blank screens | "We invite you to keep your camera on, and, we want you to take care of yourself and do what you need to do. If you can't keep your camera on, consider using the reactions or chat, and type into our shared docs, or unmute." |
| Making connections quickly with people we don't know | Humanize yourself, share something short so people can get to know you as a human. |
| If icebreaker fails | Personalizing icebreaker question & having a backup question |

**Table 1.4 Talk moves for coach session small groups**

| Challenge | Possible Responses |
|---|---|
| Sometimes people can be negative or disagree with each other | Know they might be prickly. E.g., "my students wouldn't say that, i can't do that b/c"<br>Respond with "that's interesting, let's come back to that" / "what might others think?" |
| Feeling rushed | Take a breath, be present. |
| Awkward silence | Remember it's not your time to fill space, give think time. Breathe. Remember they might be thinking. |
| Feeling nervous | Being honest about it. "I'm a little nervous! Hope you all will help me out" |

**Disrupting Lingering Assumptions about Expertise.** As the session with the coaches approached, questions about who should lead which sections of the session arose for the team, and they approached this decision collectively. Kirshner was not able to attend, and Estrada Martín and Mendy had worked on a section of findings summarizing student suggestions for how to make schools more socially just. Kirshner, Mendy, Porras-Holguin, and Estrada Martín had some doubts and insecurities about undergraduate students taking on more of a lead facilitator role in engaging coaches with these suggestions. Mendy was concerned, for example, about how to present these suggestions to experienced teachers in a way that felt respectful. Estrada Martín described it this way:

> [I] definitely [felt] nervous being that I knew I'd be leading a group of people that were most likely all older than me, but overall, I was excited and felt privileged to be able to take on a role like that. Felt trusted by the group and supported to know exactly what I needed to do to be an effective leader in that setting.

Kirshner and Campanella gave some suggestions on how to frame the suggestions using more affirmative language. Ultimately, Estrada Martín and Mendy led this portion of the meeting. The coaches' comments in the chat indicated that this was one of the most powerful portions of the session.

In a post-session reflection in our shared Google doc, Kirshner wrote in response to the prompt *What worked well that we should celebrate?*

> I was nervous about not being there…but it became clear to me as we prepared that the group was ready for a high quality presentation…Closely related, I want to celebrate the undergraduate student researchers, because, I confess, at first I wasn't sure how we should divvy up the facilitating of the small groups and various presentation parts (and wondered if coaches would have biases against being taught by undergraduate students), but after seeing the quality of ideas and preparation from Porras-Holguin, Mendy, and Estrada Martín my thinking changed and I realized I had also been working with biases about age and education that were wrong a (and the kinds of biases we try to challenge in CCI!)

Looking back, challenging these kinds of assumptions within the CCI subteam was an important part of moving toward community-engaged scholarship that is "[g]round[ed]…in asset-based understandings of community" and "[avoiding] research that marginalizes communities and justifies inequity" (Gordon da Cruz 2017, p. 374). Ultimately, we believe we are less likely to collaboratively produce knowledge and share power with community partners if we are not also embodying those values in the day-to-day inner workings of our research team.

**Part II: Co-Construction of Knowledge with Students and Coaches**

In addition to analyzing the approach to collaboration within the CCI subteam, we are also interested in assessing our efforts at the co-construction of knowledge with SVL students and coaches. What kinds of new knowledge did the two data-sharing sessions generate about learning and teaching in SVL? Did these sessions inform their praxis as activists and educators? In this section, we argue that the students and coaches expanded our initial understanding by speaking to the emotional dimensions of their experiences in SVL.

**New Analyses and Lenses.** Evidence that the sessions opened up new insights and directions for inquiry can be seen in the emphasis that students and coaches placed on experience and emotions when making sense of the data. Their responses to excerpts suggested that they were seeing themselves in the scenes (rather than as detached observers), and, perhaps because

of this, they named emotional nuances and dimensions that the researchers had not considered. Students and coaches responded to the data in ways that were embodied, experiential, and personal.

Consider the interview excerpt that began this article, in which a student recounted her experiences challenging a School Resource Officer's rationale for why he parked his police car in front of the school's entrance. Prior to sharing this excerpt with SVL students, Kirshner was excited about the various communicative strategies that the student used and her sophisticated analysis of the police officer's language. Campanella, whose scholarly interests include social movement frame theory, saw how the student was framing the issue for the officer in creative and compelling ways (Benford & Snow 2000). In the breakout group, however, after the students were asked to read and comment on the example, they focused on the student's bravery and courage. This emphasis on the emotional and relational dimensions of the data continued in the reflective part of the breakout group when students shared questions and comments. When asked for their takeaways, one student wrote, "Remember there are people who have your back even though you'll face people that will push back and try to take your power away/ degrade you."

A similar process occurred in meetings with the coaches, who brought different lenses to the data and foregrounded emotions in their meaning-making. In two of the three groups, the coaches reported feelings of nostalgia and sadness reading field notes from scenarios that took place before the pandemic. For instance, one field note described a situation where the SVL coach pulled the students into the hall to reground them in their shared purpose as leaders of the team; this kind of face-to-face encounter was not possible after school had gone virtual. One coach wrote that they "miss the in-person experience." Later, in her reflection about the breakout group conversation, Mendy noted a sense of "mourning" that came up in the small groups:

> I think one thing we didn't account for was the sort of "mourning" that would happen when we talked about our data. It occurred to me that this year's SVL projects would look different due to the remote learning, but I almost felt bad telling the coaches that they should leave room for productive failure when they felt like there was hardly any productivity in their classrooms to begin with.

If this had been framed more like a member check, then we might view these additions as a sign that we had "gotten it wrong". Instead, viewing sessions as an opportunity for co-construction of knowledge brought out the generative possibilities of bringing people together from different subject positions to analyze data.

**Evidence of Usefulness.** Although the notes from the breakout groups show examples of collaborative meaning-making, they are less clear about the extent to which the participants felt the sessions were useful to their work. On one hand, the opportunities for annotations by students enable us to see some of their reflections and feedback. The reflective post-its (Table 1.5), where we asked students to share their takeaways from the session, suggested that those who responded found insight and value in the ideas that came up in the data discussion. (Unfortunately, we did not have time for the same prompts in the coaches' session.) Moreover, in the closing chat, the most common response was appreciation for seeing and learning about the work of teams from other schools. Students liked learning "how other teams deal with these topics" or "how others handle it." Students also expressed interest in learning more about "components of policies that have been effective in the past", "How to expand out projects…to the whole school or outside of school", and "It would be very cool to learn more about how other teams have succeeded in collecting data and building relationships with teachers and staff that can help them with their projects." One student later emailed Kirshner to ask if she could share the presentation with her SVL team and discuss the relevance to her school's project. SVL program staff also shared their impression that the students felt they could relate to the scenarios and found it affirming. One

student shared with Landa-Posas informally that they felt the report proved that SVL work was important and that they wanted to share it with their team.

**Table 1.5 Examples of "takeaways" on post-its written by students**

| Topic group | Takeaways from analyzing the excerpts together |
|---|---|
| Supporting new Challenge 5280 members | Communication is really important and making mistakes will accomplish something else.<br>Also that being serious all the time might be scary<br>Make sure to include everyone and not let adults have to run all conversations<br>Me and the other Reps sit around and wait for our coach to see what's next - would like to step up our game and make sure that we are being the leaders and reps re need to be<br>Interesting (to see SVL quotes). As reps to find our strengths and challenges as reps - no matter how many - talking amongst each other and building on those and seeing how we can improve to support our teams and especially new members better |
| Navigating pushback from adults | Remember that adults often take our work personally and can be pretty touchy about it, so always act with respect and be pragmatic about how you talk to them<br>Remember there are people who have your back even though you'll face people that will push back and try to take your power away/ degrade you<br>Facing pushback can be a tool to remind you why policy is needed and wanted.<br>I think my team's work, especially this year, we really need to strategize on how to get teachers on our side. I anticipate some pushing back without knowing the full implications of their decision to do so. Because of this, I believe developing methods to address this is important.<br>I think that I learned that advocating for myself and my team is super important and I should use my position and not be scared of outcomes |

## Discussion and Implications

The process of analyzing and sharing data started with a dilemma: in CER projects which have a clear division of labor between researchers and hundreds of community partners, how can we still design opportunities for meaningful sensemaking and co-production of knowledge to inform praxis? CCI researchers and SVL staff spent several years developing norms for working together and collaborating on data collection, analysis, and program strategy. Together, they designed the CCI curriculum and district-wide programming to support the type of school-based transformative student voice work exemplified by the Moraga High School SBOE team's campaign to reunify their campus. The CCI researchers' relationships and collaboration with SVL staff embodied the core principles of community-engaged research, including criticality,

reflexivity, and expansive notions of expertise (Tuck & Guishard 2015; Warren et al., 2018). However, with a few important exceptions, the CCI researchers did not have the same kind of collaborative relationship with the students and teachers. After two years of immersive data collection with nine SVL teams, punctuated by a brief findings presentation after Year 1, it was past time to design opportunities for collaborative meaning-making with students and coaches across SVL schools.

Contributing to this special issue's focus on co-producing knowledge for justice, including its call for more robust roles for undergraduate students in community-engaged research, the first part of our findings described processes of data analysis and claim development in the CCI subteam. This team, too, faced questions about how to analyze data together. Team members were mostly new to each other; they brought different life experiences, positional identities, and roles and held different kinds of knowledge about the topic of student voice and leadership. Importantly, they also had different amounts of time available to work on this project and could only meet online because of the pandemic. In many ways, then, the internal task facing the subteam approximated the larger task of finding meaningful opportunities to co-construct knowledge with SVL students and coaches.

Looking at it this way, we found it useful to draw on the lens of *prefigurative experiments* to identify practices that the subteam developed. Although there is always room to do the work better, certain key practices seemed to have helped this group leverage its differences in identity and minimize intrusions of university hierarchy to engage in productive co-construction of data for action. Two practices stood out: iterative development of emerging claims and politicized care for each other. The iterative process enabled each member of the team to see through their initial hunches all the way to more confident claims; either alone or in

pairs, the researchers took responsibility for developing their ideas, finding appropriate evidence, revising ideas in response to questions, and formulating them in ways that were accessible to the students and coaches. Along the way, practices of politicized care enabled team members to resist predictable ways of assigning expertise in data analysis and to show compassion during a time of simultaneous societal crises. Team members sought to balance accountability to the project with tenderness to themselves and each other.

When it came time to share emerging claims with students and coaches, the CCI team designed Zoom sessions that were intended to elicit the partners' expertise about the phenomenon and also use data excerpts to make the familiar strange, that is, to see their work in new and, ideally, useful ways. From the perspective of co-constructing knowledge, the sessions were successful insofar as the dialogue that emerged generated views and commentaries that had not been part of the original analysis. Students and coaches drew on lived experience to place themselves in the excerpts and assign meanings to them. The students' identification of courage and bravery underscored the interpersonal and emotional dimensions of speaking truth to powerful people. The coaches, in turn, while reading excerpts that were from in-person school prior to the pandemic, mourned the loss of their face-to-face interactions with students. These interpretations complicated and humanized the data, turning them from words written on the page to memories and stories that resonated with the participants.

These meetings with students and coaches, however, were more like glimpses of what collaborative analysis could be than exemplars. Although the comments during the session show some evidence of engagement, we are skeptical about the overall value of the data sessions. They were limited in several ways: they took place online during time-constrained one-hour sessions. They occurred at a time in the year when both students and coaches were beginning to feel the

urgency of completing their policy narratives and were less inclined to use precious time together to take a reflective pause. They were one-offs, with little foresight about how the conversations might be sustained. Beyond the comments shared during the session, we were not able to gather more detailed reflections about the sessions from the students and teachers. This lack of systematic student or coach feedback about the sessions limits our ability to make strong claims about their value.

Returning to the distinction we drew at the beginning of this paper between large-scale community-engaged research partnerships and smaller participatory collectives, these limitations raise questions about the possibilities of practicing mutuality with and accountability to all participants in large-scale complex partnerships. What are the tradeoffs to forming partnerships that involve hundreds of students if key ethical commitments, such as relationships, mutuality, and answerability (Patel, 2015), are difficult to meet? Is there a place for research practice partnerships such as ours in the landscape of critical community-engaged research?

The short answer: we are not sure. With regard to this partnership between SVL and CCI, there were good reasons why it evolved the way it did. In its initial stages, beginning in 2016, CCI and SVL teamed up in smaller ways with just a few teachers and their students (Kirshner et al., 2020). In 2018, they decided to apply for—and were awarded—a major grant from the Hewlett Foundation that would help pay for a strategy to expand and strengthen SVL programming. SVL staff used this grant to create a new staff position to support coaches, expand programming to more schools, and enhance the stature of the work in the eyes of the district leadership. Although there is always the risk that scaling a program can lead to diluted quality, criticality, or impact, the partners saw this as a special opportunity to offer an alternative to well-funded neoliberal reform efforts that have dominated much of the education landscape in Denver

and beyond (Lipman, 2011). The award was an opportunity to lay deeper roots for SVL and influence district-wide strategy. Along the way, the CCI researchers could document key ingredients of the program, student outcomes associated with participation, and the district impacts (see, for example, Hipolito-Delgado et al., 2021a and Hipolito-Delgado et al., 2021b for analyses of student outcomes, Kirshner et al., 2021 for analysis of district-level changes, and Hipolito-Delgado et al., 2021c for implications of distance learning).

The growth of the initiative from 2018 to 2021, however, offered a stress test of sorts for the community-engagement commitments of the partnership. As noted in our introduction, SVL leaders and CCI researchers were able to maintain shared decision making and co-design among each other. However, aside from the kinds of relationships that emerged for those CCI researchers carrying out classroom ethnographies, the partnership as a whole had not developed routines for accountability to or co-design with the students and coaches. The students, of course, by participating in SVL programming, were part of rich PAR experiences directed towards transforming their schools. It is just that the research *about* that process did not itself follow a PAR model.

Though what we accomplished last year was limited and modest, we can learn and build on it. We see two practical contributions. First, we hope that by going behind the scenes to describe how we set up collaborative routines and designed sessions with the students and coaches, readers might gain specific ideas for how to design and structure processes of collaborative data analysis. Mendoza et al. (2018) argue that there is a need for articles that make visible how community research projects design and implement collaborative learning environments, rather than just report on their outcomes. Our account of the data analysis sessions with the students and teachers offered specific design ideas, such as foregrounded participant

expertise and starting with excerpts rather than findings. We would like our story to serve as an invitation to other RPPs to design and implement their own prefigurative experiments and consider alongside us how caring practices for collaborative knowledge building are enacted relationally and structured into group routines.

Second, we see *provocative generalizability*, which refers to the ways in which a study provokes new actions, at work in the process of writing this paper (Fine, 2008). Conversations with the SVL team started out with a sober assessment of the limits of our effort to share findings in the prior year. The SVL partners emphasized the continued importance of the research in elevating their work within the district and helping them solve problems of practice, such as how to make student learning legible to the district's competency-based graduation requirements. Then, however, these reflective conversations segued into conversations about the upcoming year and how we could collectively use data in more robust ways. Looking back prompted us to look ahead not just by tinkering with how to "report back" better, but more imaginatively how we could strengthen the uses of data throughout the program.

In terms of bringing the research team's *means* for knowledge construction with the students and coaches into better alignment with our desired *ends*, our discussions led to a key change in approach. In contrast to the limitations of the prior year, SVL staff said that what would be most helpful would be to flip whose timeline and research questions get prioritized in the data sharing. Specifically, whereas last year the data sessions were with whole SVL groups (across schools), SVL staff suggested that CCI operate more like a "rapid response data team" that would consult with individual student teams as needed, such as a team that collects survey data and seeks assistance in how to analyze it efficiently. We are excited about this because it suggests a "just in time" use of research, where the purpose of looking at data is driven by

student goals and timelines and closely related to their specific and unique projects. This arrangement is more emergent and unpredictable but potentially charts a promising direction for a large research partnership such as this.

Similarly, with regard to the coaches, SVL staff have asked for more advance coaching on how to facilitate data collection and analysis with their students. After all, facilitating research is not part of most teacher licensure programs, nor is it routinely part of professional development. Although CCI has offered some support for this through its curriculum, SVL staff have pointed to this as a need for more focused ongoing interaction.

Finally, this process has also fueled new ideas and motivation for sustaining meaningful roles for undergraduate researchers. In particular, we are moved to organize our work in ways that position undergraduate researchers as co-leaders in the research design, planning, and facilitation of collaborative knowledge building in the partnership. For example, SVL staff noted that in addition to reaching out to project PIs and graduate students for support with emergent research goals, SVL staff, students, and coaches would also like to call on undergraduate student researchers as part of a rapid response team.

In these ways, we saw the process of analysis and writing as provoking new ideas for practice, similar to Fine's conception, inspired by Maxine Greene, of *provocative generalizability* (2008): "does the work move readers to act?" (p. 229). Here, the work of reflecting on and writing about our process has moved *the writers* to act; we hope it offers generative tools for readers as well.

**Author Contributions**

Conceptualization, M.C., B.K.; methodology, M.C.; formal analysis, J.M. and M.C.; investigation, J.M., L.-E.P.-H., M.E.M.; resources, S.L., B.K.; data curation, M.C., M.E.M.;

writing—original draft preparation, all; writing—review and editing, all; visualization, J.M., M.E.M.; supervision, B.K.; project administration, M.L.-P., K.T.H., S.L.; funding acquisition, S.L., B.K. All authors have read and agreed to the published version of the manuscript.

**Acknowledgments**

We would like to thank other members of the CCI research team who consulted on this manuscript (Carlos Hipolito-Delgado, Shelley Zion, Beatriz Salazar-Núñez, Beatrice Carey, and Dane Stickney), Denver Public Schools, and John Albright.

## III. Coherence, Relevance, and Contribution in a Science Education RPP Meeting

By Melissa Campanella

*On August 31, 2023, about fifteen minutes into a bimonthly, ninety-minute, Thursday morning hybrid meeting of science education researchers and practitioner partners, Charles, a senior scholar and principal investigator facilitating the meeting, verbally signaled a transition to the next major item on the agenda, a "River of Life" activity about the history of the partnership. Starting with some framing about the activity, created by Indigenous scholar Megan Bang as a tool for helping research groups reflect on power and historicity, Charles offered a visual: "I love this metaphor, like, we all have been riding different streams, and for this period of time on Thursday morning, we ride this common stream and become a river. We can think of ourselves as tributaries entering this river, maybe it's today, maybe it's last week, maybe it's 6 months ago, maybe it's 5 years ago." He then grabbed the screen to share the image of a virtual whiteboard with participants, some who had joined remotely, and others who had logged in with microphones on mute while sitting around a shared conference room table. The whiteboard displayed a timeline prepopulated with images and annotations that formed a timeline of the project, more fleshed out for the early years and purposefully more sparse in the latter years, and began telling the story of the partnership. "Hopefully people can see this but you can also follow along". Once Charles got to the more recent years, he invited others to join in and add their annotations to the timeline. Slowly, 17 faces turned to black squares, and multicolored cursors popped up on the whiteboard screen. Over the next 20 minutes, yellow, pink, blue, and green digital sticky notes bloomed over the jamboard slides, layering ideas to Charles' initial offerings. Charles then closed breakouts and invited team members to unmute and share their noticings in terms of key events from their perspectives. Kitty chimed in first: "This is just my*

*perspective but, I feel like the meetings have become like a more comfortable space to bring ideas." Shan shared next, "For me this shows that iHub is [just that] a Hub. It's all connected."*

This scene, the PI framing and facilitating shared learning activity, inviting team members to reflect on and contribute to a shared document, then opening space for the whole group to debrief, has become commonplace in this research practice partnership (RPP)'s biweekly meetings over the year of this study. But had you joined the meeting at another point in the RPPs history, the scene might have been different in terms of the participants' roles, the topics of conversation, the norms for sharing ideas, and how the meeting functioned in service of the group's larger goals around advancing equity and justice in science education.

Say for example you attended the meeting on August 3, 2015 instead. Rather than logging onto a Zoom link, you would have driven or walked to the CINC building. You would have opened the door and called your greetings across the room before sitting around a long table with eight other team members. The people at the table would likely have been chatting informally with each other as they opened up their own laptops, logging into the shared google notes. Perhaps you walked in a minute or two late. In that case, the team would already be deep in project updates about making videos of real science classrooms to use in professional learning for the new, Next Generation Science Standards aligned units.

If you had joined the meeting remotely during the surge of the Delta variant of COVID-19 on August 19, 2021, you might have logged onto Zoom after finding a room or space in your house or office where the light wasn't terrible, opened the meeting notes to read a few updates on scheduling as others trickled in, then been invited to "show and tell" something within arm's reach. After hearing from each person and sharing yourself, a meeting host, perhaps a postdoc on the team who had agreed to facilitate, would have invited the group into a discussion about the

draft core commitments. You would have clicked a link to a google doc, watched others' cursors dance around the page, and settled in to make comments or post replies.

In education, RPPs are "long-term collaborations to promote educational improvement and transformation through engagement with research" that are "intentionally organized to connect diverse forms of expertise and shift power relations among researchers, educators, families and communities" (Farrell, et al., 2021, p. 4). In the last decade, RPPs have begun to serve more and more as connective tissue among research, policy, and practice in the United States. And founded in 2007, the inquiryHub partnership is one of the oldest RPPs in education. And this Thursday morning meeting has been on the calendar for nearly as long.

One reason the iHub meeting has changed over time is the work of the RPP has changed over time as has the constellation of partners present. Another reason is that our group has deliberately worked to change the culture of the meetings. While the iHub partnership has always centered in some way around improving science education, particularly for students who are owed an educational debt (Ladson-Billings, 2006) by creating materials and professional learning that position students as knowers and doers of science, there has not always been an explicit focus on bringing our meeting practices into alignment with this vision for equitable and just science education. Amid the overlapping societal crises of 2020, a global pandemic and worldwide racial justice uprisings, we decided to more intentionally attend to the ways we brought our ideas about good pedagogy in science classrooms into our day to day operations. This commitment has carried through the last four years and is still explicitly harkened back to in the meetings. For example, the project principal investigator Charles described it this way in the August 17th meeting, the first iHub team meeting of the 2023 school year:

> We're a way of doing work that's come deeply committed to participatory design with educators at different levels of systems to support equity, particularly for

> those kids Gloria Ladson-Billings framed who are owed an education debt, as Black and Brown kids, as queer kids, as kids with identified disabilities or neurodiverse kids, or based on their gender identities. And that we wanna privilege those students' experiences and center them in the materials we develop, the professional learning that we lead, and so forth. And that and that that requires collective learning together, that at least aspires towards practicing democracy in the way that we do our work, and naming that we do live in these institutions that are hierarchical, structured, and and have histories of oppression, and that continue to this day.

Other research groups who aim to intervene in the larger world to bring about more just futures have come to similar conclusions about the importance of attending to everyday interactions in team meetings. It matters to practice what you preach. For example, even before the racial justice uprisings and global pandemic of 2020, The Civic Laboratory for Environmental Action Research (CLEAR) Lab began attending specifically to how the design of their weekly lab meetings (Liboiron et al, 2017) aligns with the research group's commitments to "equity, humility, and good relations" and mirrors the group's approaches to community based monitoring of plastic pollution (CLEAR Lab, 2022; Yanchapaxi et al, 2022). These practices include consensus-based decision making (Harnett, 2011), round robin practices to ensure that "junior researchers, introverts, women, people of colour, new recruits, and others that may not otherwise speak have a chance to share their insights" (CLEAR Lab, 2017, p. 33), and group guidelines built by consensus, like "your story, your choice" (members choose what to share, or not to share), and "own your shit" (take responsibility for impact over intent), as ways to build more just and equitable space (Toupin, 2015).

Four years since making the commitment to bring our internal operations into greater alignment with our ideas about what makes for equitable and just science teaching and learning, I wanted to more systematically pay attention to what we do in our meetings, and learn from team members what felt consistent and inconsistent, particularly for team members whose

intersectional identities mirror the identities of students whose interests have been least served in schools. To aid in this effort, this study is centered on the following questions:

1. How do iHub team members experience the social accomplishment that is the Thursday team meeting, in terms of alignments or misalignments to our ideas about equitable and just science learning environments?
2. Where do iHub team members see opportunities to transform communicative practices on the team toward better reflecting those pedagogical ideals?

## Conceptual Framework

### Meetings

Meetings can be conceptualized as "speech events". They are social and cultural activities governed by rules and norms for communication and which are temporally bounded with a beginning and end. The communication that occurs within and in relation to meetings organizes relations. Communication can connect people, construct insiders and outsiders, reinforce or flatten social stratification, and allows us to do the business of everyday life (Saville-Troike, 2003, p. 13). It can define "who 'we' are, and who 'we' are not" (Boromisza-Habashi, lecture, 2022).

In order to understand our iHub meeting as a cultural space, I was inspired by the field of Ethnography of Communication (EC), and specifically EC studies of "the meeting". While there are many more contemporary examples of an EC approach to understanding meetings, e.g. Mullaney's (2006) work on politeness, small talk, and gender in managerial meetings, and Molina-Markham's (2014) study of the role of silence in Quaker Meetings, I found that an older piece of scholarship -- that of Helen Schwartzman, a psychological anthropologist who wrote about meetings in the late 80s--offered a useful framework for me as a learning scientist who is not trained in anthropology or linguistics. In fact, Sprain and Boromisza-Habashi (2012), calling on scholars to take a cultural perspective on meetings, write that Schwartzman's framework is

"particularly valuable for scholars focused on meetings and meeting dynamics but not familiar with socio-linguistics (p. 182)."

Helen Schwartzman's work focuses on everyday activities often taken for granted by researchers, considered meetings to be "ordinary behaviors" with "extraordinary significance" (1989, p. 7). When beginning her research into meetings, some of the literature had focused on the content or tasks associated with meetings, but less has considered the meeting's "function within cultural systems" (p. 4). She was also particularly interested in the role of the meeting in shaping and reflecting egalitarian or hierarchical relations in society at large. To help answer these questions, she developed a framework for studying meetings that drew on traditions in the field of Ethnography of Communication that I draw on as a conceptual frame and analytic lens in this study. Specifically, I used Sprain & Boromisza-Habashi's (2012) elaboration on Schwartzman's (1989) framework to help me begin to perceive the meeting as a cultural space and recognize components of the speech event for this study (Table 2.1).

Sprain and Boromisza-Habashi (2012) summarize and clarify three functions of meetings that are evident in Schwartzman's study of meetings across cultures. First, meetings provide a "sensemaking function" that presents participants with opportunities to create and recreate the social system they are a part of and their relations to each other. That is, meetings offer an opportunity to define the organization "writ small" and provide individuals "a way to create and then discover the meaning of what it is they are doing and saying" (Schwartzman, 1989, p. 39). Second, meetings have a social and culture validating function that allows group members to interpret and evaluate their existing social relationships. The meeting "carries" the group's culture and social structure (Schwartzman, p. 39). Finally, the meeting offers a transformational function, where the same power that is used to carry and reinforce the culture may be wielded to

reshape it. For example, the boundaries of what, who, and when counts as part of the meeting, or even the experience of work by participants can be transformed (p. 246). These functions exist across meetings, but manifest in locally specific ways.

**Table 2.1 Sprain & Boromisza-Habashi (2012) elaboration of Schwartzman's (1989) framework**

| Event Component | Description |
|---|---|
| Participants | People who interact during a meeting, including roles (e.g. speaker, receiver), relationships between participants, and responsibilities to each other and outside constituencies |
| Channels and Codes | Channels for communication (e.g. speaking, writing, singing), and codes (e.g. linguistic, paralinguistic, kinesic, etc), that may or may not be shared by all participants |
| Frame | Process that signals the beginning and end of the meeting |
| Meeting Talk | <u>Topic and Results</u><br>What the meeting was about from participants' perspectives; the types of results expected from a meeting (e.g. that a meeting produce decisions or result in consensus)<br><br><u>Norms of Speaking and Interaction</u><br>Processes for determining how and when participants speak, including turn-taking, decision rules, meeting chairs, and formal protocols<br><br><u>Oratorical Genres and Styles</u><br>Occurrences of specific forms of speech (e.g. jokes, proverbs, prayers), and styles of speaking (e.g. direct, indirect)<br><br><u>Interest and Participation</u><br>The means, sanctions, and rewards used to encourage participation, interest, and involvement in the speech event |
| Norms of Interpretation | Process for interpreting what happens in meetings, including how meetings are compared to other communicative events |
| Goals and Outcomes | Goals refer to interactional goals individuals may have for specific meetings (e.g. hire their candidate); Outcomes occur in general from the standpoint of the community, organization, or culture (e.g. cohesion) |
| Meeting Cycles and Patterns | Relationships between different types and forms of meetings |

An important critique of Schwartzman that Sprain and Boromisza-Habashi (2012) offer is that it has to do with her categorization of some groups and societies as being inherently hierarchical or inherently egalitarian. Citing Carbaugh (1988), and Wieder and Pratt (1990) they write:

> Rigidly categorizing a group or society as having an egalitarian or hierarchical social order neglects a fundamental aspect of social order! Namely, that the accomplishment of that order is founded upon the strategic use of locally available cultural resources. We advocate that scholars should look for evidence of when and how groups construct egalitarian and hierarchical social order in particular cultural contexts (p. 187).

For me, this meant that while the iHub team, as the PI put it in August, "aspires towards practicing democracy in the way that we do our work" inside the more "hierarchical" systems of universities and school districts, the way we draw on communicative repertoires to achieve social relations during the meetings would inevitably vary. Further, an ethnographic perspective invites researchers to resist value judgment. That is--the times people enact hierarchy is not always "bad," and the times people enact egalitarianism is not inherently "good." As I tried to understand how our group worked enact our ideas about good pedagogy in our meetings, I attempted to discern when, how, and why, from team members' perspectives, we did things in ways that flattened or reaffirmed differences in power amongst team members.

**iHub Vision for Science Teaching and Learning**

Individual members of the iHub RPP draw on multiple sources of inspiration and yearning—personal, professional, academic— when envisioning what science teaching and learning could and should be. As an organization, iHub works to create curricular materials, assessments, and professional learning that align to the vision outlined in the NRC's (2012) Framework For Science Education and the Next Generation Science Standards, where students use science and engineering practices, core ideas from science disciplines, and concepts that cut across those

disciplines to explain phenomena or design solutions in ways that connect to their interests and identities. Fundamentally, science education should support students' identities as knowers, doers, and users of science. Achieving this vision for "all students" requires particularly prioritizing students who are owed an educational debt (Ladson-Billings, 2006).

The iHub RPP's approach to achieving this vision is different from some other research groups, curriculum and assessment developers, and PD providers in the STEM space, in that we are deeply committed to co-design with practitioner partners (Penuel et al, 2022), and recognize that partners enter into RPPs with unequal authority and status (Coburn, Bae, & Turner, 2008). The iHub RPP's is based at the University of Colorado Boulder and our primary, long-term partner is Denver Public Schools. Other institutions that have contributed over the years include BSCS and Northwestern University, and community partners like Project VOYCE.

## Methodology

### Ethnography of Communication

Ethnography of Communication (EC) researchers start with an outsider's perspective grounded in theory, use ethnographic methods to understand local or emic meanings, then revisit and update their initial theories in light of those findings. I adopted this interpretive approach because it was important for me to better understand team member meanings, rather than rely on my own perspective about what we were doing right or wrong, or how to do things "better". Using methods from EC offered me a framework and approach through which I could begin to perceive our meetings as a culturally significant communicative event that "gives traction to understand the organization how members understand it" and "means of understanding the diversity of communicative resources for accomplishing meetings and relevant social relations" (Sprain & Boromisza-Habashi, 2012, p. 182).

**Sample**

Because this study is focused on the iHub RPP lab culture, and uses the bimonthly meeting as a keyhole for understanding the team's group life, those team members that attend this standing meeting were invited to participate in this study. I delivered written and verbal invitations to the iHub team to participate in the study.

The iHub RPP has grown substantially from the relatively small group of researchers and district partner practitioners it started with in 2007. In 2023, at the time of this study, 21 people were included on the standing calendar invite, each affiliated in some way with one or more strands of work related to iHub. These attendees included former teachers working as curriculum developers, district level coordinators, graduate and undergraduate students acting as research assistants and production managers, postdoctoral fellows, research associates, professors and project PIs, project managers, and communications directors. They were diverse in age, gender identity and sexuality, professional background, religion, and race, though both the research and practitioner side of the project was still white dominant and mostly white led. At any given bimonthly meeting, a different constellation of these people was likely to be present. Of the 21 people on the calendar invite, 16 participated in the study (Table 2). While I provide a description of the roles and social identities of participants in this study, I do not link role and identity descriptors to pseudonyms because to do so would potentially "out" individuals for their more critical takes on our meeting practices.

**Table 2.2 Participating iHub Team Members**

| Role | Intersectional Identities | # Diary Entries | Interview |
|---|---|---|---|
| Research Scientist | White cis het woman | 3 | ✓ |
| Program Manager for inquiryHub | White cis het woman | 1 | |
| Research Associate | White cis het woman | 4 | |
| Research Scientist, Junior Scholar | Pakistani cis het man | 5 | ✓ |
| Principal Investigator, Senior Scholar | White cis het man | 3 | ✓ |
| Curriculum Developer | Black cis het woman | 5 | ✓ |
| District Partner Manager of K-12 Science Curriculum and Instruction | White cis het man | 3 | ✓ |
| Director of K-12 Computing and AI Initiatives for inquiryHub | White cis het man | 3 | ✓ |
| Director of K-12 STEM Teaching and Learning for inquiryHub | White cis het woman | 3 | |
| Production Manager for inquiryHub | White cis queer woman | 3 | ✓ |
| Curriculum Developer | White cis het woman | 3 | ✓ |
| Graduate Student Research Assistant | Vietnamese cis het woman | 1 | |
| High School Science Curriculum Specialist | White cis het man | 4 | ✓ |
| District Science Coordinator | White cis het woman | 1 | ✓ |
| Curriculum Developer | White cis het man | 5 | ✓ |

**Data Sources**

The cultural life of the iHub bimonthly meeting exists in the moments of the meetings themselves, the artifacts the group generates, and the thoughts and feelings members bring to and have about the meeting. I gathered evidence of group life from meeting notes, kept in a running google document started in 2015, workspaces like Jamboard that are linked to that document,

video recordings and field notes of the bimonthly 90-minute meetings (Emerson, 1995), and solicited diaries and follow up interviews (Zimmerman & Wieder, 1977; Jacelon, & Imperio, 2005).

**Table 2.3 Data Sources**

| Meeting | Video | Field Notes | Meeting Notes | Linked Artifacts |
|---|---|---|---|---|
| August 17, 2023 | ✓ | ✓ | ✓ | ✓ |
| August 31, 2023 | ✓ | ✓ | ✓ | ✓ |
| Sept 14, 2023 | ✓ | ✓ | ✓ | ✓ |
| Sept 28, 2023 | ✓ | ✓ | ✓ | ✓ |
| Oct 12, 2023 | ✓ | ✓ | ✓ | ✓ |

**Table 2.4** Number of Diary Entries and Interviews

| Data Source | # |
|---|---|
| Diary Entries | 47 |
| Interviews | 11 |

**Google meeting notes and linked workspaces.** As a record of our collaborative work, meeting notes captured in our running Google document provide important evidence of meeting components. In addition to our team's Google meeting notes, the iHub team uses linked workspaces in bimonthly meetings including Google Jamboards, Slides, and Spreadsheets. The type of workspace used, and the participation structures employed, offer additional insight into the shifting communicative practices of the group.

**Video recordings and field notes.** Though much is recorded in meeting notes and virtual workspaces, much is not. For this study, I recorded the main meeting and breakout groups during the August 18, August 31, September 14, September 28, and October 12th meetings of 2023.

After each meeting, I watched the meeting recordings to aid me in fleshing out jottings into field notes to help me construct a "thick description" of our team's "meeting talk" and participant interactions (Emerson, 1995).

**Solicited participant diaries.** To supplement meeting artifacts and fieldnotes and build an account of the culture of our team meetings that sought to reflect the meanings made of experiences of meetings of its members, I solicited participant diaries and conducted follow up interviews with iHub team members (Zimmerman & Wieder, 1977; Jacelon, & Imperio, 2005). Diary prompts were broad and invited participants to share their perspectives on what the Thursday meetings were like and comment on common meeting components, e.g. how we started or ended the meeting (Appendix A).

**Follow up interviews.** Interviews helped me to clarify member perspectives raised in participant diaries. To prepare for follow up interviews, I read participant diaries and write memos about what I already know and was now wondering about. I then pulled excerpts from diaries to read back to participants and ask for clarification. I also planned follow up questions about the focal practices, like "When do we usually do ____ and how?" or "If we didn't do _____, what effect do you think it would have?". The interview protocol is included in Appendix B. I conducted these interviews on Zoom, then cleaned up the auto-generated transcript before analysis.

**Analysis**

I used Sprain & Boromisza-Habashi's (2012) elaboration on Schwartzman's (1989) framework for studying meetings to help me begin to perceive the meeting as a cultural space and recognize components of the speech event (Table 2.1). They write:

> We argue that the utility of Schwartzman's scheme for scholars studying meetings comes from the way that the framework can be used to categorize naturally

> occurring meetings into constitutive sociocultural components. Such analysis allows researchers to develop nuanced and empirically sound understandings of how the social life of groups unfolds in the context of meetings, and how meetings act to create, maintain, or transform group life. Schwartzman's framework provides a way to move from seeing meetings as a source of data to descriptively and interpretatively analyzing meetings as key sociocultural phenomena (p. 184).

Sprain & Boromisza-Habashi (2012) describe three uses for Schwartzman's scheme, that it can be used as a heuristic "to see what is being accomplished in a meeting and how it gets accomplished beyond the topical substance of meeting talk", it can serve as a "scheme to categorize fieldnotes or transcripts of meetings", and finally, can be used to "compare meetings across cultures (p. 185)."

For the first step, using the scheme to see what is being accomplished and how, I wrote memos about each meeting component after attending meetings, reading participant diaries, and rewatching meeting recordings. In addition to applying Schwartzman's scheme, I read meeting diaries to identify themes from a more grounded theory perspective by looking for commonalities across team member experiences as well as divergent perspectives on what we did during the meeting and how we did it (Strauss, 1990). This helped me to prepare for follow up interviews by pulling a couple of quotes from each person's diaries related to these themes to reflect back to them and ask for clarification. As I will explain in the findings, this is where coherence, relevance, and contribution in meetings came up as constructs team members were using to make sense of our efforts (Table 2.5). It is also where the importance of PI facilitation, small group work, and norms of communication like asking "what do you think?" became apparent.

In the second step, I used Schwartzman's scheme and themes identified in the first step as a basis for coding fieldnotes, diary entries, and interviews. This helped me to determine which event components and combinations were most salient as the group worked to achieve

coherence, make the meeting relevant, and ensure everyone, particularly members who entered the meeting with less status and authority, could contribute to knowledge building.

While I stop short of the third step of comparing meetings across cultures (I don't have meeting recordings, field notes, diary entries, or interviews from earlier years of the partnership from which to make such a comparison), my last step was to use Schwartzman's scheme to create the snapshot of the meeting culture in Fall of 2023 that I offer in the next section.

## Findings

Here I focus on three social accomplishments of the meeting that team members described as aligned to iHub theories about ideal learning environments: coherence, relevance, and contribution (Table 2.5). However, I first want to explain how I arrived at this scheme for organizing findings, and make explicit its origins in team members' own sensemaking about our meetings.

When conducting follow up interviews, I asked the question:

1. Our team has some ideas about what makes for an equitable and anti-racist science classroom like, positioning students as knowers and doers of science, prioritizing phenomenon that are interesting to students whose interests have not been served in schools, making sure students experience classes that are coherent, relevant, and where they contribute to sensemaking, building a classroom culture where students' can draw on their cultural and linguistic repertoires freely and without fear of punishment.
    a. Are there ways you see those ideas at play in how we plan for and engage in our Thursday meetings? Or alternatively, are there ways we might be contradicting those beliefs in our meetings? If so, might you give an example?

Although embedded within this question were several examples of ideas our team has about making science class better for minoritized students, the example interviewees most often drew upon when answering that question was coherence, relevance, and contribution (Raza et al, 2020). The following are some examples of team member responses which illustrate this theme.

> Erik: Yeah, I think our meetings are mostly structured in ways that everyone has opportunities to *contribute*…because we structure the meetings and similar to

> how we structure the classroom experiences for students, with breakout rooms, small talk, or you can type it in chat, or you can type it in the notes themselves. (Interview, emphasis added)
>
> Raven: You know we meet every other week, and sometimes it feels like that's not enough. So like making things *coherent* like, I think some of the strategies, the structures that are in place like the connecting, that helps with some of that *coherence.* Like, rather than thinking about each meeting in isolation, it does feel like there's careful attention to thinking about, let's connect to what we did last time. And let's look at our artifacts. (Interview, emphasis added)
>
> Emma: And so I feel like that, like, building on my knowledge, and just kind of accepting where everyone's at and like that I, for the most part feel valued, like my *contributions*, feel very valued. And when they don't, it's not because of anyone else. It's just because, like of my own self doubt, but just because of people being experts. And so I think that piece is really big in the meetings, that they're talking about kind of the why of things like the bigger picture to provide context and like *relevance* of what we're doing. (Interview, emphasis added)

Each of these team members invoked at least one of these constructs--coherence, relevance, and contribution--when responding to the question about how we work to enact our pedagogical stances in the meeting. Erik thought specifically about ways the meeting is structured to support team members to share their ideas and add to collective knowledge building. Raven thought about how the meeting is structured to support logical connections from meeting to meeting. Emma linked feeling like her thinking mattered to the larger group to another goal, getting clear on the “big picture” and why the meeting mattered.

This particular set of constructs--coherence, relevance, and contribution (Table 2.5) --are discussed frequently in iHub meetings in relation to curriculum, assessment, and professional development. These constructs come out of two related strands of iHub work, the development of storyline curricula (Penuel & Reiser, 2018; Reiser et al, 2021), and the creation of practical measures to sense student experience and support teachers in recognizing and responding to differences in student experiences across groups (Raza et al, 2020).

**Table 2.5** Coherence, Relevance, and Contribution

| Construct | Definition | Equity Implications |
|---|---|---|
| Coherence | The lesson is important from the students' perspective, and helps them answer a question they have about a phenomenon or problem. | Students' own perceptions of coherence vary widely based on their prior experiences, their interests, and their identities (Penuel et al., 2016; Zivic et al., 2018). |
| Relevance | Students perceive the lesson to be interesting and meaningful to them and important to their communities. | Requires prioritizing the interests and community priorities of students who are owed an "education debt" (Ladson-Billings, 2006) |
| Contribution | Students make their thinking public to support the class in building explanatory models of phenomena or solving problems. | Students from marginalized groups contribute less (Carlone, 2004; Krumm et al, 2020, Reinholz & Wilhelm, 2022), and experience epistemic injustice, where ideas are ignored or dismissed due to social identity (Fricker, 2007) |

In each section, I briefly describe the construct in terms of what it means to the iHub team in relation to its curricular and professional development work in the science education space. I then offer an idea of how the construct might apply in the iHub meeting space. Then I create a picture of how the team is working toward that end using field notes, diary entries, and interview excerpts. Here, I highlight practices, or habitual activities of our particular group, that seemed to be linked to the accomplishment of each goal. Sometimes accomplishing the goal required enacting more egalitarian relations, other times it was advanced by more hierarchical arrangements. I close each section by summarizing ideas team members shared in diaries and interviews on how to better accomplish these goals in the team meetings.

**Table 2.6** Meeting Component Combinations

| Accomplishment | Most Relevant Combinations of Meeting Components |
|---|---|
| Coherence | Goals and Outcomes, Channels and Codes |
| Relevance | Meeting Cycles and Patterns, Norms of Interpretation |
| Contribution | Frame and Participants, Norms of Speaking and Interaction, Oratorical Genres and Styles, Interest and Participation |

## Coherence

Most instructional materials available to science teachers today start from a cannon of domain specific knowledge, then presents that knowledge to students in an order that makes sense to the curator of that knowledge, but not necessarily to learners. For the iHub team, and others working toward the vision for equitable science learning outlined in the NRC Framework for Science Education (2012), the goal is instead to "promote coherence from the student point of view" (Reiser et al., 2021; Sikorski & Hammer, 2015). This shift positions the teacher as a partner whose role is to support students' agency as a sensemaker in shaping the trajectory of their learning (Penuel et al., 2023). To achieve coherence for all students, special attention must be paid to coherence from the perspective of students from nondominant groups and communities.

An analogous goal in our iHub team meetings is to promote coherence from the team member point of view, and particularly, for the project leaders to design or organize the meeting so that it is likely to make sense from the perspective of practitioner partners and team members entering the meeting with less status and authority. In interviews, team members described two dimensions to coherence when making sense of iHub meetings. The first had to do with knowing who everyone was, and how the work of others relates to their own. The second had to do with understanding what we were doing in the day's meeting, and how it related to the bigger picture of our work together--what Emma described as "where this puzzle piece of today's meeting fits into the bigger puzzle of iHub."

### *Goals and Outcomes*

A big part of building coherence is building a shared sense of the big picture. The goals and outcomes for the iHub meeting have evolved with the team. In earlier years, a goal of a particular

meeting might have been to share updates across strands of work, and the larger outcome for the organization was to use meetings to make plans and coordinate activities (See Table 7).

More recently, meeting goals have centered more around learning related to topics that cut across the various projects, and outcomes related to building relationships and a sense of what iHub is as a whole. Rachel described her sense of what the meetings do for iHub as an organization and her sense of how her individual work relates to it this way:

Rachel: I think those meetings provide, you know. There's sort of the hands on the elephant kind of thing. Like in my daily life, I'm not aware there is an elephant like. I don't think about it. Like I have work. It's just not part of the way I see things. It's almost like it's an imaginary thing that has to get attention and we have to do things together to keep it alive. So it does help put a bigger context. Seeing work as connected is, you know, I don't know. I feel like it sort of brings meaning. It brings a little bit of heart to work.

Here Rachel invokes the parable of the Elephant in the Dark to explain the experience of being part of the iHub team, and how the meeting functions to reveal more of the complete picture of iHub as an organization. In this parable, which has spread widely from its origins in the ancient Indian subcontinent, a group of people enter a room where an elephant is being held in the dark. As they touch the elephant, each person perceives a different part--an ear, a tusk, a trunk--but no one person has a sense of the whole. For Rachel, as the iHub project has grown from just a couple of projects and a couple of grants to multiple related projects with many different funding streams, the iHub RPP and its work has started to feel like an “elephant.” As one person, she has her hand on just one part of the elephant on a typical day. When the group meets, and gets to talk about what their part of the elephant (iHub) is like, she begins to have a more complete picture of the whole.

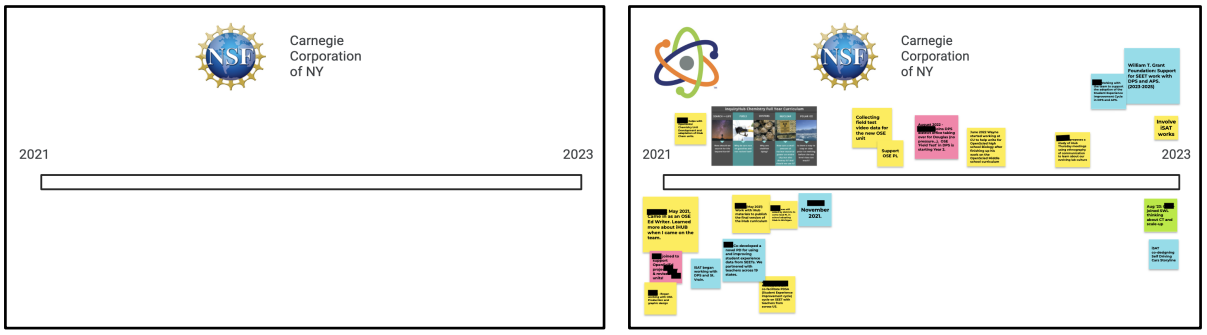
Another element of Rachel’s reflection is that the iHub meeting keeps the organization alive. The implication being that without the meeting, the organization would die, or cease to exist. This function of the meeting ties directly to why the study of meetings is important.

Meetings are sites that create, maintain, and can transform the group life of an organization (Schwartzman, 1989). Without the meeting, a coherent sense of who we are, and what we are doing together could fall apart, and the organization with it.

***Channels and Codes***

This paper opened with a vignette that featured an example activity where the PI facilitator, Charles, designed and facilitated an activity where all team members were invited to write themselves into the partnership timeline via the channel of their choice, taking time to individually posting on the virtual whiteboard, or unmuting in the full group and sharing noticings (Figure 2.1).

**Figure 2.1 iHub Team Members Populate the Virtual Whiteboard**

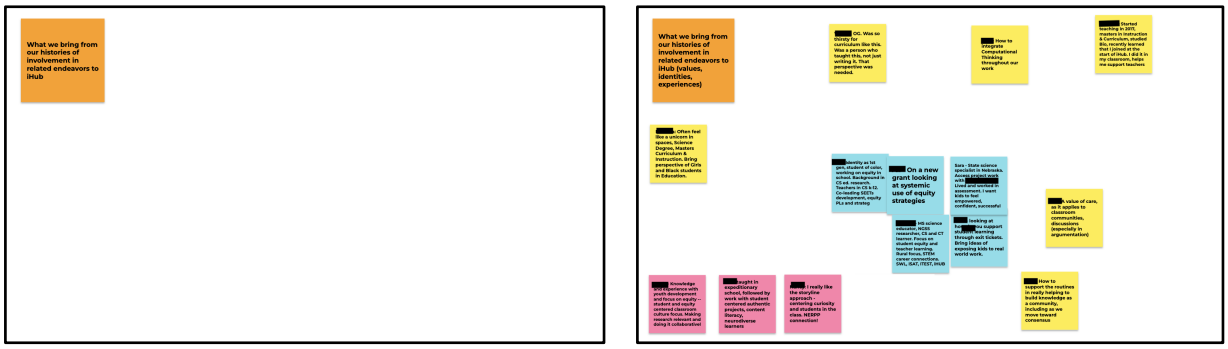



After these initial opportunities to contribute using these channels, meeting attendees were then invited to join small breakout groups to discuss a new, linked prompt: "What do we bring from our histories of involvement in related endeavors to iHub (values, identities, and experiences)?" Team members took turns coming off mute, round robin sharing until everyone had a chance to share, then building on and responding to each other's responses. Sometimes, a self-appointed team "scribe" would paraphrase others' stories and reflections, creating a new record on the next whiteboard slide (Figure 2.2).

The activity made space for multiple linguistic codes. It was appropriate to name that someone was an "OG", or "felt like a unicorn" in that space. It was also appropriate to use

acronyms “iSAT”, “NGSS”, “SEETs”.

**Figure 2.2 iHub Team Members Make Connections to Personal Histories**




In diary entries, team members talked about enjoying this meeting a lot, particularly because it allowed for connections to personal histories and project work, and because of the way everyone could contribute.

Kitty: I really liked today's meeting because it felt like it centered on our strengths and work history, and how it relates to our current projects. These types of meetings are my favorite because I feel like we can all equally participate.

This wasn’t the only time team members praised the PIs skill at facilitation and the design of activities that opened up opportunities for contribution. For example, when asked to compare the year prior, where iHub team members had been sharing responsibility for facilitating the meeting, with the fall of 2023, where Charles the PI nearly exclusively facilitated, Neal highlighted how what mattered most for contribution was the quality of the facilitation.

> Neal: I think, at the end of the day. It's like, really about creating space for people to share their ideas like. I'm looking at the end product and of course, like the process is important to that. So, Charles is an expert facilitator, who has tons of experience. So, I don't see anything in that process.

During this period of data collection, one activity was a notable exception where the language codes required by the planned activity were not equitably available to all participants. On the September 14th meeting, Charles offered the structure of a conjecture map to help small groups make sense of readings and link them to more concrete ideas for practice. Conjecture

maps are tools used by learning scientists, the field shared by many of the researchers on the iHub team, to relate theory to practice (Sandoval, 2014). For one researcher on the team, the conjecture map was a welcome structure that allowed the small group to make meaningful progress toward applying the theoretical concepts presented in readings.

> Anna Marie: I think having the structure of conjecture mapping was helpful and encouraged my group to move forward beyond where we've been in previous meetings - which was mostly fairly unstructured conversations that were super nice but not as easy to share out.

One particular function, for Anna Marie, was to help the small group get clear enough on ideas that there was something more concrete and tangible to "share out" to the full group.

However, many struggled with the conjecture map as a tool to represent ideas, was less available to practitioner partners on the team.

> Laura: "I struggled to understand exactly what the purpose of the conjecture mapping was and how to use it"

> Jean: I do think people not familiar with a conjecture map needed more support (like a filled-out example) on what a conjecture map could look like.

While this does not necessarily mean that we ought to abandon tools from the learning sciences like conjecture maps, it does suggest that we ought to prepare scaffolds more carefully if introducing language that is not shared by all participants in the meeting.

***Team Member Ideas to Improve Coherence***

Related to the first dimension of coherence, knowing who everyone was and, one suggestion one team member made was to maintain a living document like the river of life to help people know who is who and what is what.

> Neal: I noticed a person in the small group asking another person to clarify their role. The other person then had to respond by saying they are just learning from the project not working…[Maybe] there should be …a document we can direct people towards in learning about people's affiliation in iHUB. (Meeting Diary, 8/31)

Another suggestion had to do with clarifying the topic and results of the meeting, i.e. what people were responsible for.

> Hope: I'm still not confident that we understand the purpose of these small group meetings. Do we have a clear outcome or timeline for what we want to accomplish? I feel anxious when we get into these groups because I want to make sure I'm contributing, but I'm not sure what that is supposed to look like.

For Hope, lack of clarity about whether activities were meant to translate to specific deliverables brought on feelings of anxiety and uncertainty.

**Relevance**

Relevance has become a buzz word in educational reform circles and its meaning is often unclear. For the iHub team, relevance is a goal rooted in attending carefully to the interests, identities, and community priorities of students whose interests and identities have been systematically ignored or obscured from science learning, and requires taking action to repair these historic harms. Similarly, being situated in the university, which historically has advanced the scholarly interests of white men, attending to relevance would mean prioritizing the interests, identities, and community concerns of BIPOC, LGBTQ+, disabled, multilingual team members.

***Meeting Cycles and Patterns, Norms of Interpretation***

While I anticipated some difficulty in answering my interview prompt, *talk a little about how you make sense of or connect what we do in the meeting to their lives or work outside of it?*, most of the team members I interviewed shared multiple examples, from influencing their views as parents to shaping their work as professionals. Hank shared an example where one particular meeting topic, around video games and learning, so influenced him, that he talked about it with "everyone" and even got the guest presenter from the day to deliver a keynote.

> Hank: I think there's a couple of big hit home moments for me where the meetings really like, stirred my thinking beyond just the meeting. The first one was with [Guest Scholar] when we had him come and speak about his video gaming lab. And it's funny, but that talk changed my view on video games, because as a

> parent, I'm always like, Oh, my goodness, these video games are not good for kids. Blah! Blah! Blah! He changed my paradigm. It so much stirred things up in me that, like I was talking about it to like everyone, and that that's kind of cool like, not just family and friends, but it it ended up causing hit causing so much where they were looking for keynote speaker at one of the conferences, and I got [Guest Scholar to give the keynote]. after he did this keynote, and just the clusters of teachers continuing to talk about what he shared.

Other examples of relating the meeting to personal and professional life included Laura, talking about the sensation of "Charles and other iHub people talking in my head" when doing similar work for a different contract and Robert's excitement to "learn from the facilitation moves used at the meeting".

Still, not everyone had an easy time articulating the connections. Raven reflected on how although the connections between the iHub meeting and her own work still didn't "always seem as explicit to me", that she valued the shared readings, and learning about what other people were doing. One practitioner partner talked about how since the RPP has entered into a new phase of work focused on a massive effort on curriculum development, and creating a service center for assessment, and professional development, that the parts of the meeting has "shifted a little bit away from" the partnership elements that were most relevant from their perspective.

### *Team Member Ideas for Improving Relevance*

iHub team members didn't offer specific ideas about how to improve relevance, which may be a symptom of some uncertainty related to the transitional moment that the partnership is in, and our ongoing work to figure out what the meeting should be. As a starting point, we could consider looking to specific pedagogical strategies we offer to teachers working to improve relevance, like inviting team members to keep a record of personally meaningful connections to the meeting topics, more formally surveying team members' funds of knowledge, or conducting interest surveys.

## Contribution

The vision for science education articulated in the NRC Framework requires that students not only show that they know or have learned key ideas from science disciplines, but that they can *do* science, that is, that they contribute to knowledge building. Analogously, as a Research Practice Partnership, restructuring the meeting to improve the conditions that support contribution, particularly for team members who enter into the RPP with less status and authority has been perhaps the biggest priority of the group over the last four years. Our group has undertaken significant effort to shift from a meeting structure that emphasized talk and problem solving between more senior research faculty and project leads, to getting "more voices in the room." Below, I use event components from Schwartzman's framework to describe how this effort has changed our meeting practices.

***Frame and Participants***

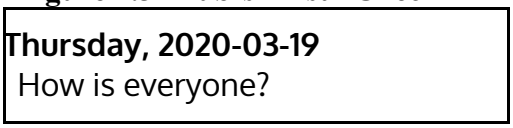
Check-ins are a common practice for many teams in the United States. During a check in, each person at the meeting responds to a question offered by a meeting facilitator, or contributing team member. Check ins are commonly thought to support teams to build better working relationships. While check ins are certainly not a new concept, they are still fairly new for the iHub team. Before the COVID-19 pandemic, the team often jumped right into business. Consider the following sample of meeting agendas from 2015-2019, which center mostly on conducting shared tasks, or giving updates (Table 2.7).

**Table 2.7 iHub Team Meeting Sample Agendas**

| Meeting Year | Sample Agenda |
|---|---|
| 2015 | Question & Answer Support for Curriculum Customization Service, Completing Lessons, Videos, Updates |
| 2016 | Introduce new member, Review Research plan, Figure out pilot teachers, Ecosystems unit update, Evolution unit update |
| 2017 | Workshop update and prep, Grant proposal, Unit Materials Clean Up, Teacher Pay for Ecosystems Unit, Teacher Pay for Professional Development, Fall Meeting Times, District Data Analysis, Revising District Interim Assessments |
| 2018 | People and Roles for Hewlett Grant, Data Collection, Spencer Grant Update, Teacher Learning Teams, Infrastructure, District Online Assessment System and Student Electronic Exit Tickets, Updates on District Request for Proposals, NSF Grant, Student Assessment Data |
| 2019 | New Organizational Tools for iHub, New Rate Based Services Model, Project Members Contact List, Fall Meeting Times, Grant Updates, Course Updates |

Beginning in 2020, the iHub team began integrating a check in practice into the meetings. In fact, the first check in that resembles the current form of check ins on our team appears on the agenda for the first meeting after global pandemic was declared on March 11th, 2020 (Figure 2.3).

**Figure 2.3 iHub's First "Check-In"**




Over time, the check in questions have become more creative, and span from silly to serious-- *what unique skill do you have that would save humanity in an apocalypse?*, *Imagine you have a family member going through a health challenge who made a decision(s) that you don't agree with, should you intervene? Why?*--but this general practice has continued for the team. Before we get into business, we have an opportunity for everyone to respond to some kind

of prompt. Sometimes we stay in the whole group to answer it, and other times we go into smaller groups of two to four.

In a test run of this study conducted in 2022, one team member described this practice as "the most important part of the meeting." Others highlighted its humanizing functions for the team: Check ins allowed team members "to open your heart and also listen to somebody else [and] hear [the] other person's beautiful story", and "to see my colleagues as fully human and vulnerable." During the period of data collection for *this* study, team members cited the check in serving a particular function toward *contribution*. This process, or frame, that signaled the start of the meeting, supported team members to feel comfortable sharing their ideas later. Consider this diary excerpt from Raven:

> Raven: I like starting with an opener, it helps me get to know the community and practice being vulnerable with new people. Sometimes I feel out of place in groups of 'academics'... It helps me to feel like I have value to add to this community. Without the initial activities, I may not have been as willing to share my ideas in the final breakout room. (Diary Entry, 9/14)

In this diary excerpt, Raven described the benefit of the check in, in that it offered a chance to practice vulnerability and moving from feeling "out of place" to a place where she believed she had "value to add" and that increased her willingness to share later on. This suggests the check in, for Raven, served to foster relationships of care that supported her contribution to the group's learning and shared sensemaking (Krist & Suárez, 2018). Next, I elaborate on those moments for small group work that happened "later on" in the meeting.

### *Oratorical Genres and Styles*

Starting in August of 2023, the iHub team began experimenting with self-selected, interest-based affinity groups. This was part of the team's attempt to find shared streams of work that cut across multiple projects and aligned to the iHub partnerships emerging array of professional services related to curriculum, assessment, professional development, and the use of

AI tools. While the meeting still occurs partly in the whole group, the team is spending more time than previous years in these small group arrangements. In her interview, Astrid explained the new cadence of the meeting in this way:

> We start off with the check in. We do a little with that. And then there's like, conversation around like "this is where we're trying to go," and then, if we had homework, then it becomes look into, you know. Let's review. Let's review the article that we read in order to come to some understanding about the thing. Then there's the small groups and breakout groups, and then we come back and sort of make learning visible together. Sometimes there's a tool, or there's a document, or there's some way for us to capture the learning. And then, if there's sort of the secondary idea, then it sort of goes through that cadence again. And then, yeah. And then we come back. And then that's when we find out, like where we're headed or if there's someone who wants to share.

When asked specifically about patterns in how people typically participate in the small groups, team members often described a difference in the genre and style of speech that occurs there when compared with the full group. Erik summarized this pattern:

> Erik: There tends to be more joking and informal languaging in small groups, especially over the video mic, than in the whole group, where most people adopt a more professional approach to their communication. I think that is because there are so many people in the meeting sometimes, and they might not know everyone well enough to feel comfortable enough to be more informal. (Diary Entry)

Consider this example of a lighthearted interaction that happened at the beginning of the affinity breakout group discussion on 9/28, where small groups were tasked with contributing to a new driving questions board to guide the next few meetings worth of topics:

Field Note 9/28

| |
|---|
| Erik asked Hank a question, "How's the chickens? Chickens staying alive? Or you got some Hawk problems? |
| Astrid raised her eyebrows then scoffed in horror. |
| Hank reassured them, throwing his hands up in the air. "No, no, chickens are good right now, I'm happy so," and trailed off. |
| Erik launched into a short chicken story of his own. "I thought we lost two at my house and I *swear* I went out there and looked for them because my son told me two were gone and the door was open." He looked up, and scratched |

the back of his head, then continued "And I was like, I think *I* left the door open which is CRAZY because I'm like, methodical about what I do out there! And sure enough! Two of them were gone! It's not a big area, you know, to look at."

Astrid made a big nod, and raised her eyebrows, and Hank nodded, with a little grin. "Yeah"

But Erik had a twist to reveal. "Then, the next day! They're in there! They were like, hiding from us! I don't know where!"

Astrid broke out into a toothy grin, hands on her cheeks, and Hank gasped, "Oohh!"

Hank and Erik went on for a short time hypothesizing where the chickens might have hid, and Astrid pulled up the shared workspace. Then the group settled in on the task.

Here, team members were goofy for a little while before settling into the task. Still, when this group was on topic, they continued to use humor, gesture, pop culture, and personal references in relation to a genuine questions they had about implications of AI in science instruction, and its ability to adequately evaluate the contributions of multilingual learners, and where to go to learn more about how best to adapt our curricular units.

Field Note, 9/28

Hank, reading a virtual sticky note added to the questions board that someone in another small group asked, "Can AI be used to simulate experiences of students?"

Astrid responded, curious. "Yeah, I was kind of stuck there, too. I was like, oh?" raising her pitch skeptically.

Hank replied sarcastically, "We'll just replace our students with AI. They're all doing great", flicking his hand dismissively.

Erik joked, "Well, great! We love all our ideas. Lay in the incubator and plug in. [a Matrix movie reference]"

The team moved on to discussing more topics and possible questions, including inviting scholars or school district-based experts to the meetings.

When sharing out to the whole group, Astrid adopted a more formal tone. With a straight face, and business-like tone, she offered a brief summary of the conversation her group had, and some tentative questions the group could pursue moving forward.

Field Note Excerpt 10/12/23

> Charles invited the full group to start sharing requests for how to build on the day's learning. "Is there a topic that you want to elevate and really press for in terms of a reading or a topic that we should discuss? You know, coming up soon? Be selfish, everybody, like, when I say that, advocate for something that your project would really benefit from.
>
> Astrid came off mute to share from her group. "Yeah, we were thinking about, just, you know, bringing in an expert, whether it's from a school district that has already sort of fallen into having to deal with this. And what are the things that they're doing to be successful and supporting teachers along the way? Or even if it's somebody who's not even in education like, you know, translating on a broader scale or at a different level, just to help us get some language, some what are the things that are working? But also, what questions do you have? And maybe that could be some place for us to be able to use, you know, as a place to start, or something like that.

In addition to offering space to draw more extensively on available communicative repertoires -- humor, pop culture, personal connections, everyday language-- the small group meetings offered a "judgment free" space, where it was okay to make mistakes, even in front of leaders in the partnership. For Neal, who met with me, the PI, Raven, and Rachel in the assessment affinity group throughout the fall, the chance to work with the same group of people made contribution "much easier".

> Neal: So just like, talking in front of them is, like, much easier. Even if I'm saying something wrong, they wouldn't judge me…So I think that judgment free evaluation free feeling is good, especially as [description of intersectional identity]. And especially in front of two leaders.

Kitty also described how small groups, and especially meeting with the same people in those small groups over multiple meetings, opened up new styles of communication, and comfort in sharing thinking that might otherwise have been less available to her.

> Kitty: And that's just a really comfortable space for me, like I see those people every week, multiple times we're talking I've met them all in person. And I feel like working with people that I work with a lot cause you feel more comfortable giving feedback like. There's some of my coworkers that are like, "I don't agree with you", and you're like, "Oh, cool like, what's that about?" And then some people are like, "Oh, my gosh! That's such a great idea!" But sometimes you have to have that comfort [to say] I don't agree with you. If I didn't [know someone I wouldn't]. But if I knew someone I'd be like, actually, I think you know, my opinion is different, or something, you know. So I like that part of it.

For Kitty, meeting with the same small group repeatedly helped her feel comfortable enough for the kind of direct communication required to say "I don't agree with you", though she recognized that not everyone needs to know coworkers well to speak this way to others. Importantly, when reflecting on our antiracist work, and "living our values" Laura reflected on how disagreement was fairly uncommon on our team:

> Laura: The only time that I have felt pushed is when you [author] have brought up things that are going on outside of your life, like outside of the university, and what we should be doing in other places. I think those are the only times I ever felt like somebody was really pushing against something I was or was not doing to really live those values when like, what are you doing outside of this work? Being asked that.

Critical race scholars have documented the niceness in relation to whiteness (Low, 2009, Tanksley & Estrada, 2022). The fact that we rarely disagree, or as Laura put it, are "pushed" on something we are "doing or not doing", could be evidence of politeness and whiteness at play in our meetings. Since time in groups and building relationships, at least for some, as Kitty describes it, opens up space for more direct communication, this may have important implications for our work in challenging white supremacy culture on the team.

***Norms of Speaking and Interaction***

One of the instructional strategies iHub promotes in instructional materials and professional learning comes from the Complex Instruction approach, and is called assigning competence. According to the Complex Instruction website, "Assigning competence is a *public statement* that specifically recognizes the intellectual contribution a student has made to the group task. Teachers can assign competence to any student but it is especially important and effective to focus attention on low-status students" (*Equity in Cooperative Learning Classrooms | Complex Instruction*, n.d.).

Though they did not describe it as such, several team members who entered into the iHub partnership with social or professional identities that typically confer lower status, e.g. BIPOC team members and non-academics, described experiences that were similar to "assigning competence." They talked about being made to feel that they had valuable contributions to make to the team meetings and collective knowledge building. One such team member, Emma, recounted her experiences in her interview:

> Emma: I can be very quiet in the meetings just because I feel like I'm learning so much and I don't know amazing things to contribute but, just, people ask that. They see me as the like expert from the [partnership] side and they ask me questions in that way and so that makes me feel good.

While Emma still has occasional doubts about the value of what she has to contribute as someone who is "learning so much," being positioned as "the expert" on the partnership side has contributed to her sense of efficacy and willingness to share in the meetings.

While assigning competence requires that the statement be made publicly, at least one team member had a 1:1 experience with the project PI that prepared her to feel like she had valuable things to contribute to the group's shared work. Astrid's recollected an interaction with the project PI that happened soon after she joined the team in 2021:

> Astrid: I engaged with Charles [PI] you know. Well, first of all, I don't have a PhD. I don't have a doctorate. So that was a layer of intimidation walking into like

> all these scholars and academics, and it's quote unquote, just me, and so, you know, instantly, I feel like, am I gonna, you know, add something that's really gonna make a difference? Or, you know, is it sort of like, I'm a member of the team, I should come. But I felt like my contributions mattered, and even right away, when we were trying to figure out we were building our meeting schedule and we were divvying up who was gonna be leading different meetings or whatever. And right away I jumped in to lead a week with Charles [PI] right, and my first thought was, Who do you think you are like? … But right away in the planning with [PI] he's like you know, that is why you're here, you know. And so even those few moments, like, there didn't need to be some strategy. There didn't need to be some big coaching moment right away. I felt like, Well, you're right, like, I should be doing this. And so, although it wasn't built into the meeting structure, that's very much him. I think, because it happened in a real authentic way. It wasn't anything like, it didn't feel like he was reading a card. And so, because sort of the boss had that moment with me away from the team and him just him and then it felt like, then you, you get over your stuff. Just jump in and do what you need to do.

This interaction was significant for Astrid, who was questioning what they brought to a meeting that included so many academics, and specifically "PhDs". Particularly, it felt good that the PI jumped into collaborative work with her in preparation for a team meeting, in a way that affirmed "why [she was] here," and that he accomplished this in a way that was matter of fact, and not something that felt like an extra effort, or like "he was reading a card." This interaction helped her to "just jump in" to the meetings and the work of the RPP as a new member.

***Interest and Participation***

Moments where team members asked "what do you think?" served another purpose, in addition to positioning their colleagues as having valuable knowledge and experiences to share with the group. This move, in combination with the small group conversation, the whole group report outs, served as a sanction/reward for participation. Emma described it as accountability:

> Interviewer: I wonder if you might say a little bit about if we didn't use breakout rooms and maybe specifically the Strand breakouts. But even just breakouts generally. What if? What effect do you think it would have on our team meetings and how people feel in the meeting?
>
> Emma: I think of that kind of, like, accountability piece. I try to stay engaged, but just especially on virtual meetings, when there's just a lot of people on the screen

> that I'm like, “oh, no one's paying attention to me,” and obviously not intentionally check out, but just the like, I don't have that same, yeah, the ownership.

Laura shared a similar sentiment in response to the same question:

> Laura: I think if we were in full group the whole time, I'd probably get more bored, and I probably spend more time doing other things because I'm in Zoom rather than paying attention to the conversation. Honestly. I'm more accountable in the small groups.

While there are no explicit consequences for not participating in the small groups, or contributing to what is shared out with the whole group, team members feel the social pressure to add to the conversation more keenly in small groups and when others ask them about their thinking.

### *Team Member Ideas for Improving Contribution*

Overall, team members described ample support for contribution on the iHub team meetings. Still, some wonderings remained about how to further expand those opportunities. Hope shared an idea in a diary entry:

> Hope: Thinking today about sharing out from breakout rooms is almost always verbal - would love to try a new method for this that encourages participation from quieter people - can we write a summary? or caption an image? or do a structured share-out in a few words or phrases. It was really nice today to have a chance to pause and reflect on the history of iHub and how we all fit in.

Here, Hope highlights a pattern in the channel we use for debriefing after a small group. It is almost universally a whole group, spoken debrief. And, she offers a new idea to open up new channels and roles for participants. Rather than one “spokesperson” from each group sharing out loud, Hope imagines each person sharing in writing or visually. This could open up opportunities for contribution in our whole group settings, where, as Emma also highlights, it's still “usually the same people” who share.

## Discussion

This inquiry started from the need to more systematically study the team's work to enact its ideas about equitable and just science instruction in the partnership meetings. I explored how iHub team members experience the social accomplishment that is the Thursday team meeting, in terms of alignments or misalignments to our ideas about equitable and just science learning environments. I also explored where iHub team members perceived opportunities to transform communicative practices on the team to better reflecting those pedagogical ideals.

The iHub RPP has generated a substantial body of self-scrutinizing and self-reflective research--e.g. Severance, Penuel, Sumner, & Leary's (2016) study of teacher agency in co-design, Johnson and colleagues' (2016) work on tensions in professional development, Frumin's (2019) study of the codesign of the iHub biology curriculum, and Penuel and colleagues' (2022) piece on practical design knowledge. This study, however, is different from previous self-studies of iHub. It focused specifically on the iHub team meeting as a window into understanding the group's efforts to better enact its own pedagogical theories in the everyday running of team meetings, particularly with respect to prioritizing coherence, relevance, and contribution of team members who entered the RPP with less authority and status.

RPPs vary in how they define and pursue equity related goals (Farrell et al., in press), many RPPs with equity aims tried to sharpen their focus during multiple and overlapping pandemics including the COVID-19 pandemic, racial justice uprisings, and renewed assaults on multiracial democracy. They responded by helping partners identify needs and concerns of teachers during remote learning (Patrick & Newsome, 2020), to document how families and communities responded creatively when institutions failed (Greenberg et al., 2020), to counter deficit narratives about learning loss (Kirshner, Salazar-Núñez, Cortez, Hipolito-Delgado, 2021) and to support educators and education leaders in responding to assaults on racial and gender

equity efforts in schools (Gleason, 2022, in preparation). This study offered another example of how RPPs worked to respond -- by attending to internal team dynamics and working to make the RPP a good place to collaborate and work, where things as seemingly trivial as meetings also reflect the group's broader theory and ethic of change.

Because RPPs are oriented to blurring lines of expertise and aim to shift relations between researchers, educators and communities, there is already an expectation of reflexivity in RPP spaces. Existing within unequal societies, RPPs must work continuously toward enacting their values around expertise and distribution of power. Studies about RPP dynamics include ongoing role negotiation amid ever changing local conditions (Farrell, et al., 2019), balancing competing goals (Resnick & Kazemi, 2019), honestly reckoning with how researchers reproduce harm (Denner, Bean, Campe, Martinez, & Torre, 2019), and mapping how academic capitalism can push relations in partnerships toward the transactional--an exchange of goods and services--and away from "authentic partnership" (Zion et al, 2021, p. 159). Reidy (2022) discusses how the promise of RPPs are contingent on relationships of care and dignity that are actually established within them, and Tanksley & Estrada (2022) use a Critical Race Theory approach to theorize how whiteness as property and politeness are at play in RPPs and imagine ways of prioritizing marginalized communities. Additionally, while there is a tacit assumption that researchers and practitioners should share power and responsibilities completely equally in RPPs, there is also a recognition that sometimes a more pronounced division of labor, where university staff take on more traditional roles related to data collection, analysis, and reporting at the request of practitioner partners, is desirable or necessary to achieve shared goals (Oakes & Rogers, 2006; Campanella et al, 2023).

This study adds to the conversation on RPP dynamics by offering a close look at how members of the iHub team deployed their available communicative resources toward realizing their goals for everyday relations in team meetings. While working toward coherence, relevance, and contribution might seem to almost exclusively require enacting egalitarian social relations, it wasn't always so. For example, from a team member perspective, the goal of supporting all team members in contribution was advanced when the PI took back the role of being lead facilitator. While this reinscribed his social position as a leader relative to others on the group, he also structured activities to fulfill a sensemaking function, where team members each contributed their thinking around a shared line of learning or inquiry.

Other RPPs might find coherence, relevance, and contribution on their team meetings to be meaningful constructs against which to assess the RPPs dynamics. While no single practice that was evident in the iHub meeting snapshot from this time can be lifted into a new context and expected to work towards the same results, other groups interested in advancing these goals might consider their meeting facilitation practices and use of small groups, and purposefully incorporating practices like assigning competence. RPPs might also consider their existing frameworks for guiding equitable and just teaching and learning and applying strategies that they implement in classrooms in their team meetings.

Finally, those interested in studying RPP dynamics might find Schwartzman's framework, as elaborated by Sprain & Boromisza-Habashi, and methods from Ethnography of Communication as useful to systematically inquire into those dynamics. This could yield new knowledge about how RPP teams enact relations using their available communicative resources, sometimes in more hierarchical ways, validating existing social roles, and other times in ways that moves the group toward egalitarianism.

## Limitations

A major limitation of this study is that not everyone who attended the meetings from August - October of 2023 ultimately participated in the study. A larger conflict with the district research office of research and accountability meant that several school district practitioner partners stopped attending meetings partway through the period of data collection. This group of practitioner partners included two Black women working in the district, who have since become active in two different partnership projects.

The study is also limited in terms of generalizability. The meeting practices that allowed the team to make progress toward accomplishing the goals of coherence, relevance, and contribution for team members were culturally situated. While it would be possible to apply Schwartzman's framework to the study of the cultural accomplishments of another RPP team meeting, it is not possible to lift cultural practices from our context and enact them in another with any assurance of similar results. In fact, at another time, or in another place with different people, these same communicative practices might function in service of hegemony.

Finally, taking on a primarily ethnographic lens in some ways closed off opportunities for a more critical view on the meeting. A critical race analysis of the iHub RPP almost assuredly would have made visible elements of white supremacy that are pervasive in society and in other partnerships like ours (Tanksley & Estrada, 2022)

## Conclusions

We are deep into a period of intense backlash following the 2020 racial justice uprisings and in response to pandemic policies for masking and remote learning. Heritage Foundation sponsored Project 2025 and other systemic attacks on DEI vow to cut funding for and ban discussions about making schools and workplaces better places to be for BIPOC people. Even

incremental, largely ineffective measures, and symbolic efforts like implicit bias training are under fire. Constructs like coherence, relevance, and contribution, which have not been flagged by anti-equity actors as "controversial" could allow teams that are under additional surveillance at this historical moment to continue to pursue more equitable and just relations among team members who enter into RPPs with different configurations of status and authority.

For the academic field in general, this study offers another way to engage in critical reflexive self-study, whether it relates to coherence, relevance, and contributions on teams, or other topics. Schwartzman's framework is specifically useful for comparisons of meetings across cultures. While in EC this has usually meant comparing Western cultures to non-Western societies, it could also mean comparing the cultures of research labs and RPPs over time.

## IV. Making an Action Toolkit "One's Own" in the Movement to #RestoreTheRevisions to Colorado's Social Studies Standards

By Melissa Campanella

Anti-LGBTQ+ and anti-racial equity policies and legislation have been introduced by school boards and legislatures around the United States as part of a growing movement to ban teaching about race, sexual orientation, gender identity, labor history, and more. Initially modeled after the Trump administration's 2020 executive order "Combating Race and Sex Stereotyping," which aimed to restrict diversity and inclusion trainings at the federal level, state and local right-wing politicians have relentlessly introduced laws, resolutions, and policies to quash teaching and learning about so-called "divisive concepts". As of this writing, UCLA's CRT Forward initiative has tracked 805 measures aimed at restricting the ability to speak truthfully about race, racism, and systemic racism, and the ACLU has identified 513 anti-LGBTQ bills introduced around the country at the local, state, and federal level (CRT Forward, 2024; ACLU, 2024).

In addition to borrowing from the 2020 Executive Order, these efforts have drawn inspiration from a long history of white supremacist attacks on public education-- for example, closing public schools rather than integrating them (McGhee, 2021) and characterizing ethnic studies as "promoting separatism" (Palos, 2011). In so doing, politicians have weaponized widely held racist, sexist, and anti-LGBTQ beliefs to make money and gain power (Kumashiro et al, 2021). Since the introduction of the idea of "controversial topics," legislation has presented anti-equity and anti-justice efforts under the guise of more universally appealing terms, e.g. "transparency", "Parents' Rights", and opposition to "pornography" to advance the aims of anti-democratic, anti-equity actors (Kingkade, 2022; AP, 2022; Pengelly, 2023).

Although movements to suppress teaching about the history and contributions of minoritized groups in the United States are not new, something notable about this latest iteration of anti-equity efforts is the way conservative PACs and organizations have deployed virtual information sessions, toolkits, and calls to action to mobilize speakers to appear at public comment at the state, district, and school level (Pollock & Rogers, 2022). For example, Moms For Liberty, a far-right lobbying organization that engages in anti-student inclusion activities, reported over two million dollars in revenue in 2023, nearly six times as much revenue as the previous year, primarily from two mega donors (SPLC, 2024; AP, 2023). These funds have supported the creation of a digital collection of parent facing resources on topics like books, "CRT", "gender ideology", "SEL", "Restorative Justice", and directs visitors to state specific chapters, which each have their own social media groups, events, and targets (Moms for Liberty, 2024). The group has also hosted national conferences, including a four-day conference in Philadelphia, featuring strategy sessions including titles "Protecting Kids from Gender Ideology" and "Mastering the Spin: Effective Messaging Strategies" (Mother Jones, 2023).

The flow of funds through the anti- "CRT"[1] ecosystem is made purposefully murky by non-profits with deceptive names like "Free to Learn Action" who present themselves as non-partisan nonprofits and fail to disclose relationships with partisan monetary backers like the Concord Fund (OpenSecrets, 2021). Further, these efforts benefit from ever-present coverage and amplification of anti-"CRT" scripts through media outlets that span the ideological spectrum.

With less monetary backing and media attention, those who *do* want young people to engage with more critical perspectives on race, gender, and the nation's history have also worked

[1] Consistent with Pollock & Rogers (2022), I use quotation marks around "CRT" to distinguish Critical Race Theory (CRT) and the caricature of CRT presented by anti-equity actors.

to develop and deploy information sessions and action toolkits to turn people out to public comment. Such groups include non-profits like the African American Policy Forum, and left-leaning lobby groups which bring in significantly less money than right wing counterparts, e.g. Red, Wine, and Blue, which raised just under $6,000 in 2024 (OpenSecrets, 2024), Florida Freedom To Read Project, which only recently secured its 501c4 status. Others include purely volunteer and ad-hoc efforts, like the one that is the main focus of this paper, the campaign to #RestoreTheRevisions to Colorado's Social Studies standards after right wing attacks were lodged against a revised set of standards set to be implemented in 2023.

Virtual action toolkits are popping up in service of a whole range of political efforts -- campaigns to end the sale of invasive plant species, the fight for Palestinian liberation, efforts to bust attempted book bans, and more. Because people use them to learn how to participate in political processes, they merit attention as resources for learning and political engagement. They are an exciting case of everyday learning for political action (Curnow & Jurow, 2021). Despite the widespread use of virtual action toolkits, it is not well understood how design elements of the toolkits scaffold collective action. To explore these issues in connection with a particular toolkit and effort, this study focuses on two questions:

1. How did individuals transform action toolkits and make them their own in the movement to #RestoreTheRevisions to Colorado's Social Studies Standards?
2. What might this suggest about the design of toolkits and scaffolding collective action?

## Learning Through and For Collective Action

White nationalist forces have established the public meeting as a key arena in the fight for what and how to teach about race, gender, and more, and for seizing political power in the United States by playing on racial resentment and anti-LGBTQ sentiment (e.g. state and local as

well as state and local level school board meetings). Some learning scientists have called for clear responses to white nationalism and for challenging the assumption that "political" commitments or action are "out of bounds" in educational research. Booker and Vossoughi (2014), for example, asked how the field of learning sciences could engage more directly with the political dimensions of defining and studying learning. In 2017, the Politics of Learning Writing Collective asked learning scientists to consider "the responsibilities researchers of learning have in the wake of Trump's election and proliferation of far right, populist nationalism across the globe" (p. 1). In 2018, Garcia and Philip prompted the education research community to look anew at the kinds of solidarity or collective action that might be "built powerfully" from existing contexts of learning (p. 343). In 2021, Curnow and Jurow, in their introduction to an edited special issue of the *Journal of the Learning Sciences*, raised the need for research on learning in and for collective action.

These calls built on existing politically engaged research in the learning sciences that has argued that sociocultural theory does not go far enough in emphasizing the sociopolitical and the ethical dimensions of learning (e.g., Vakil & Higgs, 2019). This political turn in learning research can be thought of in a few ways. Some who adopt this political lens look at the ways that all learning and interaction is political. For example, Philip and colleagues (2018) study the tangled-up politics of an engineering curriculum on drone design. Others have looked at the kinds of intentional learning environments that develop people's political consciousness, especially youth (Tivaringe & Kirshner, 2021). Some have considered the politicization process among *adults* in the public sphere, such as occurs within public meetings and public comment settings, e.g. Melendez (2021) study of moments that challenged or supported spanish speaking immigrants in participatory budgeting process in Chicago's 49th Ward. Since this study focuses

on the design of tools to support public communication in community meetings, and how individuals made use of those tools as supports for engaging in collective action, it is both a political project and focused on learning in a political context.

## Action Toolkit Scripts

Action toolkits are common in activism. They often include sample scripts that toolkit users can read outright or adapt when writing or speaking to their representatives. But, there are legitimate concerns about over-reliance on scripts in organizing and activism. In our information sessions on HB 1192, we called out opposition to the standards as "astroturfed"—that is, artificially made to appear grassroots— in part because of the way scripted messaging was massively deployed and purposefully mischaracterized the standards.

Beyond concerns that scripts can be deployed nefariously, another concern with scripts is that they are less effective in moving policy makers to action than unscripted, personal stories. A common piece of advice for communicating with representatives about policy and important issues is to make it personal (ACLU, 2024). Influential organizers have also spoken about the critical role that stories of real, personal experiences and unscripted moments play in successful changemaking. The late healthcare activist Ady Barkan's viral confrontation of GOP Senator Jeff Flake on an airplane illustrated the effectiveness of "bird-dogging", a grassroots political strategy where a pair or small group of constituents closely monitors and questions politicians or candidates on camera, often at public events, to get them to share their honest feelings about an issue or admit things they would not in a more structured setting (Barkan, 2017; Indivisible, 2020). #Metoo organization and movement founder Tarana Burke, delivering the keynote address at Dartmouth's 2023 MLK celebration, emphasized the importance of stories not just in social change but in personal healing:

> At a really basic level, our stories don't get told. Our stories get cut off, our stories get muted, our stories get stolen. We're told to swallow our stories. And I tell survivors all the time, the most important person you have to tell your story to is yourself. (Burke, 2023)

A reliance on scripts over personal stories raises questions about a person's meaning or authenticity. In some cases, people in positions of authority are suspicious that speakers are not conveying their real feelings or positions on an issue but are instead being used by others for political reasons, or are simply parroting others' ideas. For example, Kirshner and Geil (2010), in an analysis of public comment participation by youth activists, reported how a school board member sought to delegitimize their arguments by alleging that they had not written the words that they read. They describe how at a school board meeting in a large, urban, public school district, a high school class of Latine students, some of whom were English language learners, presented results of surveys they had administered to teachers in their school. The students had written a script for their presentation as part of their class work; at the meeting they took turns reading parts of it. They communicated key statistics about teachers' views of the lack of resources in their school. After the presentation, two white board members questioned whether the presentation had actually been authored by students. One said, "What you each read, did you write the thing that you read? Did you write the words that you wrote...Did you write, what you read to us tonight?" Youths' reading of scripts and use of academic forms of discourse led to suspicion by adult policymakers, primarily because of the adults' flawed assumptions about what the youth presenters were capable of.

In a similar vein, I remember calling my house representative's office and being questioned by a staffer "are you reading from a script?" "I am!" I responded. "I get nervous so wrote down what I wanted to say." Even as I recognize the purpose a script served for me, I also

have caught myself yelling at clips of anti- "Critical Race Theory" opponents taking over public comment, "They don't even know what CRT is! They are just reciting talking points!"

All this is to say that scripts can be used in a range of ways. Sometimes, when we read talking points for testimony, or sign petitions, our interaction with the narratives prepared by movement organizers are minimal. There are times I've signed onto petitions and sent letters to representatives without even reading the full body of the message. With regard to HB19-1192, at least 95 people used a petition and email form letter created by Grassroots for Education (pseudonym) to send messages to the CDE between May 1st and May 23 in support of updates to state social studies standards to the Colorado Department of Education Standards Review Board (e.g. email feedback received, CDE, 2022). Although the form letter included a statement encouraging personalization of the message, only a few people customized it to their own personal perspectives or stories, and most did not.

Other times though, interaction with toolkit scripts is deeper. Again, I draw on personal experience to name some conjectures that I explore in this paper. Over the course of another campaign centered on a different bill, SB21-62: Jail Population Management Tools, I used scripts provided by a local abolitionist network, now called the Bring Our Neighbors Home (BONH) Coalition, to learn about the bill and guide preparation of written and spoken public comment. This organization produced form letters but also developed a unique design innovation in the creation of their toolkits (an innovation, as I will demonstrate, that we iterated on in the effort to #RestoreTheRevisions). Rather than offering a single, complete script and one invitation to personalize the message, BONH created a customizable message tool that offered multiple opportunities to make decisions about points to emphasize and made multiple invitations to link to personal stories (Figure 3.1).

Though the bill ultimately did not pass, organizers with BONH found that the toolkit supported a wide range of people, students, formerly incarcerated persons, family members of those who were held and suffered or died in jail over unpaid bonds, those concerned with the financial costs of jail overcrowding, and others, to deliver written and spoken testimony (BONH Lead Organizers, personal communication, 2022). They also felt the variability in pro SB21-62 messages helped legislators understand the diversity of constituents in favor of the legislation and bail reform, and that having multiple messengers helped build resonance among decision makers with the arguments in favor of ending cash bail (Benford & Snow, 2000).

Personally, the customizable message tool helped me build fluency in multiple critiques of the current system and evidence-based arguments for reform. Over the months of the campaign, listening to how others made use of the potential talking points and how legislators responded with questions or counterarguments. This helped me decide which points to emphasize in my own testimony, and which new arguments to add that were so far missing (for example, linking jail depopulation to public health policy during the second year of COVID-19 protocols). It helped me have enough information that I felt confident signing up for and speaking at public comment, even when the nerves hit in the moment. By the end of the campaign, my understanding of the cash bail system and the function of policing in society had transformed.

People don't become skillful at sharing personal stories and linking them to policy goals or political movements overnight or without support. The customizable messaging format that BONH created, and which we took up in the #RestoreTheRevisions Toolkit, might be thought of as an additional *scaffold for personalization* of action toolkit scripts. Scaffolds are temporary supports that aid learners in bridging between things they can already do by themselves, to things

they can't do independently *yet* (Reiser & Tabak, 2014). In the next sections, I elaborate on this theoretical perspective to underscore this complex role for toolkits and describe the analytic framework for this study.

**Figure 3.1 BONH Toolkit Innovation**

***Subject Line Ideas*** (Or write your own!)
[SAMPLE]
[SAMPLE]
[SAMPLE]

BODY
***Introduce Yourself***
My name is [FULL NAME] and I am from [YOUR ZIP].
You can also include identities like [SAMPLE IDENTITIES]. [Naming affiliations with groups can at times be helpful, but it is likely most useful to appear as an individual at this point.]

***Explain why you are writing, or craft your own reason***
[SAMPLE]
[SAMPLE]
[SAMPLE]

***Choose 1-2 issues you are concerned about, personalize, or write your own***
[SAMPLE]
[SAMPLE]
[SAMPLE]

***Make an ask***
[SAMPLE]
[SAMPLE]
[SAMPLE]

***Sign your name***

[YOUR NAME]

## Mastery and Appropriation of Cultural Tools

To understand what is going on when individuals "personalize" activism scripts, I draw on Wertsch's (1997) concept of mastery and appropriation of cultural tools, which for him, was

important for thinking through historical narratives and their role in national identity development. Dissatisfied with undifferentiated notions of "internalization" in learning and identity development, which made no distinction between being able to skillfully repeat a historical narrative and believing it, Wertsch looked to Russian philosopher Mikhail Bahktin. Writing from 1930-1936 while working in exile as a bookkeeper in Kazakhstan, Bahktin's thought deeply about the extralinguistic features of language, that is, the contextual qualities that are impossible to separate from a word's meaning. Using the Russian word for appropriation, "prisvoenie" which has a meaning similar to "making something one's own," Bahktin described the process of taking words, saturated with contextual meaning and others' purposes, and "forcing it to submit to one's own intentions and accents." (p. 294)

Bahktin (1981) writes,

> All words have the "taste" of a profession, a genre, a tendency, a party, a particular work, a particular person, a generation, an age group, the day and hour. Each word tastes of the context and contexts in which it has lived its socially charged life; all words and forms are populated by intentions. Contextual overtones (generic, tendentious, individualistic) are inevitable in the word. As a living, socio-ideological concrete thing, as heteroglot opinion, language, for the individual consciousness, lies on the borderline between oneself and the other. The word in language is half someone else's. It becomes "one's own" only when the speaker populates it with his own intention, his own accent, when he appropriates the word, adapting it to his own semantic and expressive intention. Prior to this moment of appropriation, the word does not exist in a neutral and impersonal language (it is not, after all, out of a dictionary that the speaker gets his words!), but rather it exists in other people's mouths, in other people's contexts, serving other people's intentions: it is from there that one must take the word, and make it one's own. (p. 293-294)

For Wertsch (1991), cultural tools--the artifacts, symbols, language, and practices that are developed within a cultural community and mediate individuals' interactions with the world --- are, like Bahktin's "word", at least part "someone else's" but can also be made "one's own" by imbuing them with purpose. It is quite possible to repeat words--for Wertsch, these took the form

of historical narratives in his analysis-- skillfully and convincingly without accepting them as true. This is mastery. On the other hand, it is possible to master a narrative *and* identify with it-- to connect it to one's own life, to add to it one's personal meaning. This is appropriation.

For this analysis, I consider action toolkits, like the #RestoreTheRevisions toolkit as *cultural* toolkits (Swindler, 1986), which offer a "repertoire" of cultural resources, for example, language, styles, beliefs, and skills, from which people construct "strategies of action" (p. 273). The #RestoreTheRevisions scripts and suggested talking points could be mastered, i.e., copy and pasted, or repeated with fidelity. An opponent of HB19-1192 could read through and master the talking points of the toolkit! I will demonstrate that in some cases, the toolkit's scripts and talking points were mastered, and in even more cases, they were *appropriated* by the people who turned out to speak in favor of the revised standards.

To connect the concept of appropriation with the importance of toolkit design, I want to also highlight Wertsch's perspective on the production and consumption of cultural tools. Importantly, Wertsch acknowledges that "the forces of production which give rise to cultural tools in a sociocultural setting are often quite powerful in shaping the forms of mediated action that will occur" (Wertsch, 1997, p. 7). In other words, the cultural tool makes possible, or more likely, a certain range of actions. Language allows humans to communicate with others, but mediates our perception of the world. Social institutions like schools or workplaces transmit cultural norms about conduct. And, the forces of production include 'access to the means of production', facilitated by resources and power.

Still, while cultural tools are "always involved in shaping action", and shaped themselves by power, Wertsch (1997) cared about how those tools still "never mechanistically determine [action]" (p. 7). People have agency, even though tools enable and constrain it. Like Wertsch, I

am interested in what people do with cultural tools, and I care about producing them in a way that opens up more possibilities for action. I hope by showing that appropriation can take many forms and help make a script "one's own" in ways that yield compelling testimony in public meetings.

## Context for Study

In Colorado, a 2019 law called HB19-1192, The Inclusion of American Minorities in Teaching Civil Government Act" resulted in the revision of the state's social studies standards and became the focus of right-wing attacks. Local groups like the Independence Institute, supported by national groups like the 1776 Political Action Committee, targeted the revised standards and organized written and public testimony to demand that the standards be purged of "activist elements" (Woodruff, 2022). In April 2022, the standards revision committee stripped mentions of LGBTQ people before 4th grade, and in May, replaced most *specific* mentions of minoritized groups with *generic* language like "diverse perspectives" (Meltzer, 2022). Mentions of equity and gender identity, and nearly all mentions of race and racism were also stripped from the standards (Colorado Department of Education, Board of Education, 2022).

Multiple coalitions leapt into action. Three were most apparent. The first was a Hispanic-led coalition, comprised primarily of local political leaders and organizers. The second a coalition comprised mainly of individuals from LGBTQIA2+ serving orgs, which ultimately worked to coordinate with the first coalition. And finally, a coalition of parents that organized around the similar, but distinct slogan "Restore The Cuts!" ("cuts" referring to the redline edits).

I became a part of the LGBTQIA2+-led Coalition, which had membership affiliated with about five community organizations and agencies. Each of these organizations had between five and 25 active members. I created and managed a Twitter page for the Coalition whose following

grew to around 40 followers. As a part of a public comment working group within the LGBTQIA2+-led Coalition, I collaborated with two other members to refine a toolkit and plan information sessions ahead of state school board meetings. State meetings were held around the state that year while the main building was being renovated, so we partnered with local orgs ahead of meetings to host both in person and Zoom info sessions. While I do not discuss this in detail here, we held community engaged co-design meetings before the information sessions to refine the info session presentations and tools, which past research suggests can be its own important context for learning (Gordon Da Cruz, 2017; Penuel, et al., 2022). During these co-design sessions, we offered a "first draft" of the most up to date toolkit and information session presentation for local residents to respond to, which inspired edits to the final presentations and versions of the tools shared in the sessions and online.

To develop the toolkit I also relied on what I learned from being a toolkit user, and reached out to organizers at Bring Our Neighbors Home (BONH) to get advice on how to go about such an undertaking. Thus, the basic design of the #RestoreTheRevisions toolkit incorporated both the customizable script innovation (Figure 3.1), and additional content sections that were a combination of the types of categories of information BONH had provided and design elements Coalition partners and I decided would be important to include in order to remove barriers to participation and personalization of testimony (Table 3.1).

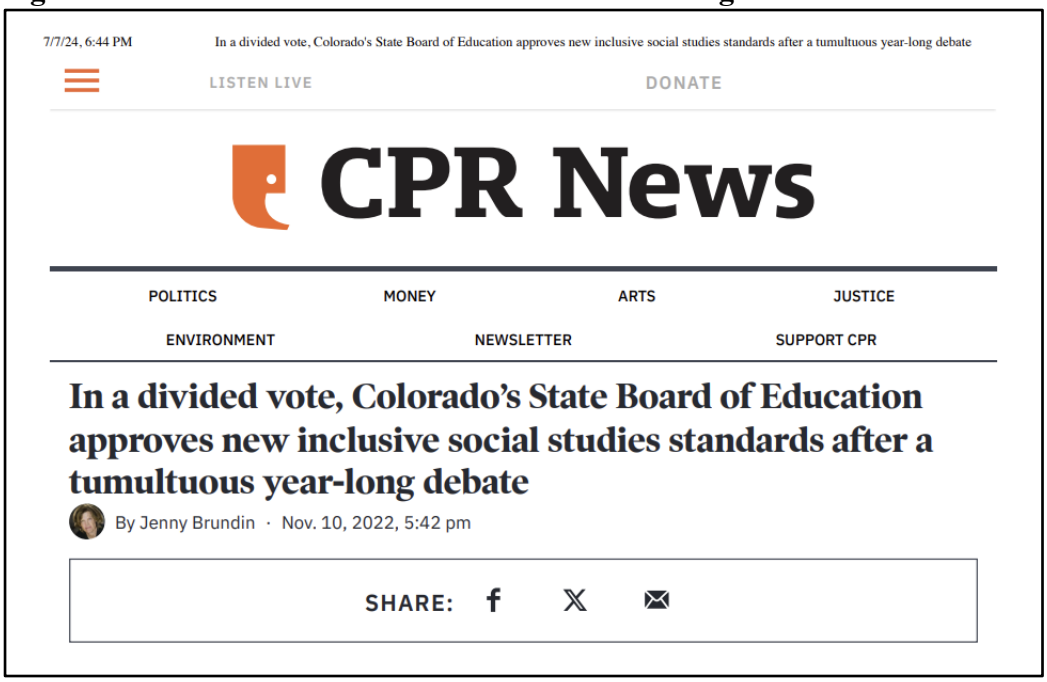
**Table 3.1** Toolkit Design Elements

| Section Heading | Contents | Purpose |
|---|---|---|
| Next Public Comment Opportunity | Continually updated calendar graphic with date for next comment | Provide easy access to continuously updating logistical information |
| What's the Issue? Links to Get Up to Speed | Internet links with information about the topic | Provide background information and recent developments |
| How to Share In Person Testimony | Description of what to expect, e.g. where to find sign-up sheets, who and when will read names, time limits for testimony, rules about what is allowed (e.g. paper copies), and what is not (e.g. signs) | Remove need for individuals to research this information, reduce anxiety |
| Public Comment Tips | Information about how to assess and reduce personal risk; Sample structure for testimony (Introduce yourself, state your issue, explain why you care/how you are impacted, make an ask) | Provide a sample structure for testimony, make it easier to get started and keep testimony to time limit |
| How to Share Written Testimony | Instructions on how to email written comments | Remove need for individuals to research this information, provide an alternate mode to share comments |
| Customizable Script | See Figure 3.1 | Provide possible talking points; facilitate personalization of testimony |
| Sample Tweets | Examples of Tweets that could be copied and pasted | Facilitate spreading the word about the issue via social media |
| Shareable Graphics | Link to a google folder with campaign graphics | Facilitate spreading the word about the issue via social media |

After six months of organizing and a concerted effort to mobilize speakers at three of the five final board meetings of 2022, the Colorado State Board voted 4-3 to adopt State Social

Studies Standards that included nearly all of the content that had previously been deleted (Board Docs, 2022; Appendix E).

**Figure 3.2 Colorado Public Radio Headline Following Final Standards Vote**




## Methods

I relied primarily on four sources of data for this study: interviews, public comment videos, public comment transcripts, and toolkit versions (Table 3.2). Digital copies of the #RestoreTheRevisions action toolkit went through three iterations; I reviewed different versions depending on the timing of each speaker's testimony. Versions of the toolkit were made available ahead of the three meetings for which we coordinated testimony (Appendix E). Changes from version to version included updating with meeting dates, times, and location for public comment as information became available, and updating sample scripts based on evolving discourse around the standards (for example, adding new talking points about the dangers of the American Birthright "Standards" when those were introduced). I interviewed a subset of those

who spoke who agreed to partake in the research. I also gathered public record text and video of their testimony.

**Table 3.2** Participants and Data Sources

| Interviewee | Self-Identifiers | Interview | Video | Transcript | Toolkit Version |
|---|---|---|---|---|---|
| Gray | PhD, Youth Worker, Coalition Organizer, White, They/Them | ✓ | Fort Baker | Fort Baker | V1* |
| Sylvia | Colorado United Staff, Coalition Organizer, White, She/Her | ✓ | Lonar | Lonar | V2* |
| Melora | College Student, Lesbian, Disabled White, They/Them | ✓ | Fort Baker | Fort Baker | V1 |
| Sonya | QEC Staff, Researcher, Parent, Chicana, She/Her | ✓ | Lonar | Lonar | V2 |
| B'Elanna | High School Senior, Latina Trans Woman, She/Her | ✓ | Lonar | Lonar & Denver | V2, V3 |
| Beverly | Social Scientist, White mom from conservative county | ✓ | Fort Baker | Fort Baker | V1 |
| Nerys | White parent, former candidate, community organizer, pastor | ✓ | Colorado Springs | Fort Baker | V1 |
| Bridget | White parent, longtime advocate for LGBTQ students in conservative county | *Dropped from analysis. Prepared back up testimony but did not deliver it. | | | |

In the interviews, I asked participants to recall how they got involved in the effort to #RestoreTheRevisions, and to describe some of the actions they took. We then focused on a particular form of action, speaking at public comment. For this portion of the interview, I used the stimulated recall approach, where participants reviewed a record of their activities, and then

were asked to reflect on different aspects of that record (Calderhead, 1981). In this case, I played a video or asked participants to read a written record of their public comment in favor of #RestoreTheRevisions early in the interview (Appendix C). I then asked participants to reflect on what revisiting their testimony brought up for them, with follow-up questions about how they went about preparing to deliver testimony, what resources they used, and how they decided what to say. We also discussed the emotions that came up for them while delivering testimony, if and how participating in the effort to #RestoreTheRevisions changed them, and their perspectives on what caused the board to ultimately approve revised standards in line with HB19-1192.

To understand how individuals transformed action toolkits and made them their own in the movement to #RestoreTheRevisions to Colorado's Social Studies Standards, and any implications this had for toolkit design and scaffolding for collective action, I compared the testimony they delivered to what was made available to them through the toolkit or in person information sessions at that time in the campaign (Table 3.3).

But I needed a framework to help me better understand how speakers were conveying their *belief* in what they were saying and making changes to the sample messages. For this, I turned to Lemke's (1998) theorization of linguistic resources for attitudinal meaning. Lemke explains how language communicates not only the content of an utterance, but the speaker's position with respect to that content.

> Whatever we have to say about the world, we can also tell others, in the same utterance, to what extent we believe what we say is likely, desirable, important, permissible, surprising, serious, or comprehensible. In making these evaluations of propositions and proposals, we also orient our text in the larger world of available social viewpoints on our topic, and we further define our identities as meaning-makers with particular values as well as beliefs (p.1).

Though explicitly a non-exhaustive list, Lemke identified seven evaluative orientations that communicate the position of a speaker in relation to what they have communicated, or, what

he called “evaluative orientations”, summarized in Figure 3.3. To locate these orientations within an utterance, Lemke analyzed the noun and verb phrases within sentences and longer sections of cohesive text to identify propositions about the truthfulness of the statement. Thus, communicative markers could signify the speakers’ attitude in relation to the proposition.

**Figure 3.3** Summary of Lemke’s (1998) Evaluative Orientations

| | | | | | |
|---|---|---|---|---|---|
| Desirable<br>It's *wonderful* that John is coming | ↔ | Undesirable<br>It’s *horrible* that John is coming | Important<br>It’s *crucial* that John comes | ↔ | Unimportant<br>It *doesn’t matter* if John comes |
| Probable<br>It's *possible* that John is coming | ↔ | Improbable<br>It's *doubtful* John is coming | Obvious<br>*Of course* John will come. | ↔ | Incomprehensible<br>*No way* John will come |
| Usual / Expected<br>It’s *normal* for John to come | ↔ | Unusual / Unexpected<br>It’s *surprising* for John to come | Humorous<br>It’s *hilarious* that John is coming. | ↔ | Serious<br>It’s *pressing* that John come. |
| Appropriate<br>John *should* come | ↔ | Inappropriate<br>John *shouldn’t* come | | | |

While the examples in Figure 3.3 emphasize evaluative markers that can be represented in text, there are more than just linguistic markers that communicate attitudinal meaning. I thought about four types of markers when considering the resources made available through the #RestoreTheRevisions Toolkit when compared with the attitudinal meaning conveyed by users of the toolkit in public comment (Table 3.4). Those included specific linguistic markers, like vocabulary and grammatical constructions, as well as extralinguistic constructions, including gesture and intonation (Table 3.3). I coded video and testimony transcripts for linguistic and extralinguistic markers that would provide evidence of mastery and appropriation of toolkit resources, these included word choice, discourse markers, and evaluative markers, as well as gesture, intonation, and facial expressions.

**Table 3.3 Categories of Linguistic and Extralinguistic Markers**

| Linguistic Markers | Extralinguistic Markers |
|---|---|
| Word Choice: Specific vocabulary that conveyed meaning or intentions. | Gesture: Hand movements, facial expressions, and body language that conveyed meaning or emphasis. |
| Evaluative Markers: Grammatical constructions that conveyed the speaker's opinion or attitude towards something (elaborated in Figure 5). | Intonation: Variation in pitch, stress, and rhythm in speech that altered the meaning or emotional tone of a sentence. |

**Table 3.4** Linguistic and Extralinguistic Resources Made Available in Toolkit

| Toolkit Version | Sample Scripts | Linguistic Markers | | Extra Linguistic Markers | Script Mastered or Appropriated by Study Participants |
|---|---|---|---|---|---|
| | | Word Choice | Evaluative (Lemke, 1998 ) | Toolkit Designer's Intended Intonation | |
| 1 | I am concerned about the committee's decision to replace *specific* mentions of American Indians, Latinos, African Americans, Asian Americans, and LGBTQ+ individuals within these groups with *generic* language… | Concerned, specific, generic | Serious, Undesirable | Wary | ✓ |
| 1 | In 2019, I celebrated the achievement of passing House Bill 1192, ensuring the inclusion of the history, culture, and social contributions of racial and ethnic minorities, religious minorities, and the LGBTQ individuals within these minority groups in public school curriculum. | Celebrated, achievement | Desirable, Important | Enthusiastic | ✓ |
| 1 | If allowed to take effect, recommendations to remove specific references to these groups will have an enormous, detrimental impact to our LGBTQ+ youth and all students. | Enormous, detrimental | Undesirable, Probable | Authoritative, Serious | ✓ |
| 1 | We know that to feel supported and affirmed students must see themselves reflected in the curriculum, and to develop empathy and understanding, students must also learn about those whose identities differ from their own. | Supported, affirmed, must, differ | Obvious, Expected | Authoritative | ✓ |
| 1 | As an educator, I rely on the standards as a resource for planning. I find that when specific examples are listed, it sparks ideas for me and helps me develop more rigorous lessons. | Rely, specific, sparks | Expected, Desirable | Informative, Professional | ✓ |
| 1 | I am a member of one or more of the groups that have now been erased from the standards and hidden under the generic language of "various peoples and cultures." | Member, erased, hidden | Undesirable, Serious | Frustrated, Taken aback | |
| 1 | As a student, I went through school not seeing people like me reflected in the curriculum. | People like me, Reflected | Undesirable, Serious | Frank, Informative, Trustworthy | ✓ |
| 1 | My rights as a parent of a student in Colorado matter just as much as the parents who have expressed opposition to these revisions. | My rights, Just as much | Obvious, Serious | Unapologetic | |

**Table 3.4 cont'd.** Linguistic and Extralinguistic Resources Made Available in Toolkit

| Toolkit Version | Sample Scripts | Linguistic Markers | | Extra Linguistic Markers | Script Mastered or Appropriated by Study Participants |
|---|---|---|---|---|---|
| | | Word Choice | Evaluative (Lemke, 1998 ) | Toolkit Designer's Intended Intonation | |
| 2, 3 | The voices in opposition to the revisions inspired by this law are receiving support from political action committees outside the state. | Receiving, political, outside | Undesirable, Serious | Warning | ✓ |
| 2, 3 | Honor the democratic origins of the original revisions and reject outside influence in our standards revision process. | Honor, democratic, reject, outside | Important, Serious | Passionate | |
| 2, 3 | The Board of Education has expressed its desire to do whatever it can to support the academic success of students who are least served by our current system. We know that for students to achieve in school, students must see themselves reflected in their classrooms. And, we know that inclusion of those at the margins also has benefits for all students. | Expressed, desire, know, must, margins, all | Appropriate, Obvious, Desirable | Authoritative, | ✓ |
| 2, 3 | The existing standards already make reference to diverse groups and multiple perspectives, yet time and time again, specific groups are routinely omitted. To change this, these groups must be intentionally included and repeatedly mentioned in the standards. | Already, change, must, intentionally, repeatedly | Serious, Undesirable, Inappropriate | Disappointed, Passionate | |
| 2, 3 | Teachers use standards to plan lessons. More examples means more support for that planning, and higher quality lessons. | Use, examples, support, quality | Obvious, Desirable | Informative, professional | ✓ |

**Table 3.4 cont'd.** Linguistic and Extralinguistic Resources Made Available in Toolkit

| Toolkit Version | Sample Scripts | Linguistic Markers | | Extra Linguistic Markers | Script Mastered or Appropriated by Study Participants |
|---|---|---|---|---|---|
| | | Word Choice | Evaluative (Lemke, 1998 ) | Toolkit Designer's Intended Intonation | |
| 1 | The law is on the side of public school educators when it comes to supporting ALL students and creating schools that are a safe place for everyone to learn and to grow. Teachers and schools are not only protected by law, but also mandated to do this work. | Law, ALL, safe, protected, mandated | Expected, Desirable | Authoritative | |
| 1 | Students in our district represent that diverse population with regard to race, gender, sexuality, immigration status, language acquisition and many other markers of identity. | Our District, Diverse | Important, Appropriate | Appreciative, matter-of-fact | ✓ |
| 1 | Making school safe, inclusive, and respectful for all students means specifically working to make sure it is safe, inclusive, and respectful of the groups that have so far felt unsafe and excluded. | Safe, inclusive, respectful, so far, unsafe, excluded | Important, Desirable | Passionate | |
| 2, 3 | The "moderated standards" aren't moderate. The same actors who proposed replacing our state standards with American Birthright Standards, authored by a coalition that includes SPLC identified hate groups, support the version presented to the board in June. You must reject efforts to perpetuate the exclusion and erasure of LGBTQ people and people of color in our standards. | [not] moderate, actors, replacing, our state, reject, perpetuate, exclusion, erasure | Inappropriate, Serious | Cutting, Moral Clarity | ✓ |
| 2, 3 | The rhetoric of opponents to HB1192 and the original revisions is concerning. Email testimony from opponents has included calling LGBTQ inclusion "evil", and threats of violence at school boards are becoming more common. The board learned about genocide studies this session. I invite you to consider, where does this type of language lead? What message does it send if you succumb to pressure to cut references to LGBTQ+ and people of color in our standards? | Rhetoric, concerning, threats, succumb, pressure, cut | Inappropriate, Serious | Cutting, Moral Clarity | |
| 2, 3 | HB19-1192 was passed with strong bipartisan support by legislators who were democratically elected by the state's people. | Strong, bipartisan, democratically | Desirable, Important | Reminding | |

Finally, I worked to triangulate linguistic and extralinguistic marker evidence of appropriation with evidence from interviews, braiding together participants' reflections on their choices. I summarize evidence of mastery and appropriation of all participants in this study in Tables 3.5 and 3.6, but detail only four examples in the body of the paper-- one example that illustrated mastery of toolkit messaging, and three that illustrated appropriation. There are several reasons for this. In terms of selecting cases to demonstrate mastery, Sylvia's case of mastery was simply more interesting than Grey's example. She delivered testimony under unique circumstances where board members cut the public comment period short, and had to cut elements of the script, whereas Gray was able to recite their full comments. For the cases of appropriation, a technical failure in the live stream during B'Elanna's testimony meant that I did not have sufficient evidence of extralinguistic markers like gesture which would have made her case inconsistent with others presented here. Rather than leave only her out, I opted to select a subset of participants that represented some of the different stances speakers brought to their testimony: speaking as a LGBTQ/BIPOC people and former students, and speaking as white parents.

## Mastery: Delivering Someone Else's Testimony

I use the first case to illustrate mastery, but not appropriation, of a #RestoreTheRevisions script. This case, and another that I summarize in Table 3.5, are unique because they are both examples of Coalition members reading testimony that was prepared by someone else (me). I used the toolkit that I wrote as a support while composing the text that Sylvia read from, and they made minimal changes to the script I provided.

### Case: Sylvia

#### *Background*

Sylvia was the meeting facilitator for the LGBTQ-led Coalition. A white, queer woman, and transplant to Colorado from a Southwestern state, Sylvia's role at her parent organization Colorado United was primarily on the legislative side of the work.

***Context for Testimony***

Sylvia delivered testimony that I wrote based on what the LGBTQIA2+-led Coalition had determined to be a key priority going into the Lonar meeting. Following a very successful Pro-HB19-1192 turn out in the prior meeting, which was held in a conservative district presumed to be aligned with efforts to redline the standards, we learned that conservative board members planned to shift tactics. Again, drawing on tactics devised by special interest groups at the national level, they would be introducing their own set of "standards", known as American Birthright, into consideration for adoption (Brundin, 2022).

Given one key Democratic board member's desire to appear moderate and willing to work across the aisle, our group felt it was important to make explicit the ideological link between the American Birthright "Standards", which had clear links to white supremacist extremism, and what might have been seen as a more moderate choice of just adopting the redlined standards. As an individual who represented a legislative advocacy group that routinely commented on proposed policy. Sylvia explained in her interview, "I could say what [other members of the coalition] couldn't say because I represent Colorado United, and [not] a government agency." Individuals in our coalition that worked with government agencies were under obligation to maintain political neutrality in public comments, and so could not talk about the political nature of the move to introduce the American Birthright Standards in any testimony.

***Mastery: Linguistic Marker Evidence***

Before presenting linguistic evidence of Sylvia's mastery, it is important to note that the public comment period was cut short at the Lonar meeting after the board went far over time discussing earlier agenda items (including the American Birthright Standards). Speakers from our coalition who had waited all day to testify were abruptly directed to trim their comments down to just one minute. Still, Sylvia's on the fly edits maintained much of my original word choice, and cut to the core point I aimed to make, which was that voting for the redlined version of the standards would not represent a "compromise", but rather, a capitulation to extremist interests. In the figure below, I provide the original script Sylvia read from in the left column, and in the right column, cross out text that Sylvia cut from the testimony I prepared, and underline new text that she added when delivering the testimony (Figure 3.4).

**Figure 3.4 Melissa's Script vs Sylvia's Testimony**

| Excerpt of Script Prepared by Melissa | Excerpt of Testimony Delivered by Sylvia |
|---|---|
| A new set of standards floated by a board member this week were prepared and influenced by various political action committees, think tanks, groups with significant interests in privatizing education. Others are SPLC-recognized hate groups. For example, The Family Research Council, one of the organizations in the American Birthright Coalition, is an evangelical Think Tank explicitly opposed to LGBTQ rights. These groups have poured money into local trainings aimed at building the appearance of a grassroots parents movement, and to strategically foment outrage and score political points and power. These are the same groups that influenced what commenters this morning referred to as the "moderated" standards, and the redlines and rewrites in that version have the same motivations. A vote for the moderated standards is not a moderate position. | <u>So good afternoon. My name is Sylvia. I'm a policy manager at Colorado United. I want to talk to you today about the new set of standards that were introduced. These standards</u> were prepared and influenced by various political action committees, think tanks, groups with significant interests and privatizing education. Others are SPLC-recognized hate groups. ~~. For example, The Family Research Council, one of the organizations in the American Birthright Coalition, is an evangelical Think Tank explicitly opposed to LGBTQ rights.~~ These groups have poured money into local trainings, aimed at building the appearance of a grassroots movement to strategically foment outrage and score political points ~~and power~~. These are the same groups that influenced what the commenters this morning referred to as moderated standards and the redlines and rewrites in the versions that have <u>some of</u> the same motivations. A vote for the moderated standards is not a moderate position. |

** Underlined text is newly created by Sylvia; strikethrough text was left out by Sylvia*

While Sylvia did temper some of my language and stumble occasionally, for example, changing the "rewrites in that version have the same motivations" to "rewrites in the versions that have some of the same motivations", she kept the most important phrase fully intact "A vote for the moderated standards is not a moderate position."

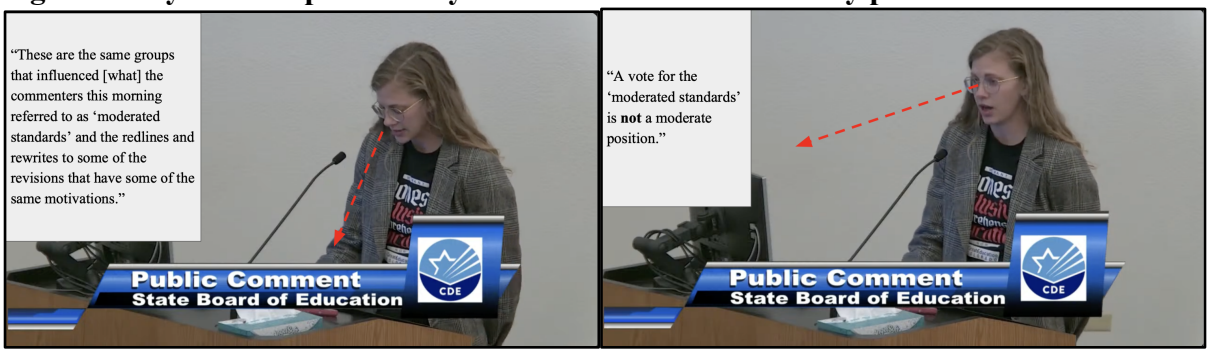
Other edits similarly kept the essence of the argument while saving time, like when Sylvia cut references to specific groups behind the effort to redline the standards, and instead described the groups only using the more umbrella terms I'd identified, "various political action committees, think tanks, groups with significant interests and privatizing education".

***Mastery: Extralinguistic Marker Evidence***

There is also extralinguistic evidence of Sylvia's mastery of my testimony. Sylvia used eye contact to drive home the key point of the testimony I prepared. In addition to looking up from her phone to say "a vote for the moderated standards is not a moderate position", Sylvia, who had previously been speaking very quickly, also slowed down significantly for this sentence.

Finally, the testimony I crafted for the Lonar meeting was intended to be a warning, highlighting the dangerous anti-democracy and anti-public education forces behind the opposition to HB19-1192. Sylvia's demeanor, straight face, and stern tone matched with this intent (Figure 3.5).

**Figure 3.5 Sylvia uses pace and eye contact to underscore a key point**



***Summary***

Sylvia's delivery of the my testimony at the Lonar meeting was faithful to its original intent, as exhibited by her on-the-fly editing decisions which kept key word choice and main ideas intact, as well as the tone, facial and body language, and pace of her delivery of the key points. Another reason I view her testimony as an example of mastery but not appropriation is that while she agreed she was the right messenger and read the testimony as if it were her own, she was not entirely convinced that even acknowledging the introduction of the Birthright Standards was the right decision.

> I remember the way I felt in that moment. I think of a few things that come to mind. I feel like it was really important to speak out about the American Birthright Standards. I also think it was an intentional move of theirs, like, to introduce those standards to, like, confuse our argument and get the attention on those standards. And so it's kind of interesting to think about, like, and I was thinking about the same thing with the anti-trans sports bans. Yes, on the one hand, how do you confront the bigotry, and stand up against it in the way that, like something that terrible needs to be stood up against, while also not like falling into the trap that they're setting for you and like getting you to focus on that?

Sylvia's concern that in "confront[ing] the bigotry", one risks "falling into the trap that they're setting for you" was …In this sense, she masterfully communicated the point the Coalition asked her to, and focused her testimony on the American Birthright standards, and the danger they posed, but was not necessarily convinced that this was the right thing to do. She displays mastery by delivering the message with fidelity even though she wasn't sure it was the right message to deliver.

**Table 3.5** Linguistic and Extralinguistic Evidence of *Mastery*: Gray and Sylvia

| Case | Consistencies in Linguistic Markers | | | | Consistencies in Extra-Linguistic Markers | | | |
|---|---|---|---|---|---|---|---|---|
| | Word Choice | | Evaluative Orientation (Lemke, 1998) | | Intonation | | Gesture | |
| | Toolkit | Testimony | Toolkit | Testimony | Toolkit | Testimony | Toolkit | Testimony |
| Gray *Mastery* | Providing examples in standards helps teachers plan lessons.<br><br>rely, specific examples, planning, wisely [approved], sparks [ideas] | Near word-for-word | Desirable Obvious | Desirable Obvious | Flattering Complementary | Flattering Complementary | N/A, not provided | Smiles, makes eye contact |
| Sylvia *Mastery* | The "moderated standards" aren't moderate.<br><br>[not] moderate, actors, replacing, our state, reject, perpetuate, exclusion, erasure | Near word-for-word | Inappropriate Serious | Inappropriate Serious | Urgent Resolute | Urgent Resolute | N/A, not provided | Straight face, stern tone |

**Table 3.6** Linguistic and Extralinguistic Evidence of *Appropriation*: Melora, Sonya, B'Elanna

| Case | Changes to Linguistic Markers | | | | Changes to Extra-Linguistic Markers | | | |
|---|---|---|---|---|---|---|---|---|
| | Word Choice | | Evaluative Orientation (Lemke, 1998 ) | | Intonation | | Gesture | |
| | Toolkit | Testimony | Toolkit | Testimony | Toolkit | Testimony | Toolkit | Testimony |
| Melora | To feel supported and affirmed students must see themselves reflected in the curriculum.<br>● Supported | I think that having education on these topics would help LGBTQIA2+ students [be] more accepting of themselves.<br>● Self-Accepting | Obvious<br>Important | Warranted<br>Probable | Authoritative | Authoritative, Compelling, Caring | N/A, not provided | Looks up at the dais throughout testimony, only occasionally glancing down at notes<br><br>Inclines head for emphasis |
| Sonya | I celebrated the passing House Bill 1192 and the inclusion of [minoritized Coloradans] in the standards.<br>● Inclusive<br>● Celebrated | As you all know, this is a historic law… one of the first, if not the first, to to be intersectional. This is historic!<br>● Intersectional<br>● Historic | Desirable, Important | Obvious<br>Unusual | Enthusiastic | Encouraging, Motivating | N/A, not provided | Counts benefits on fingers<br><br>Shakes hands in celebratory gesture<br><br>Turns head, closes eyes, puts hand on heart |
| B'Elanna | Prioritize safety, inclusion, and respect for marginalized groups to ensure a welcoming environment for all.<br>● Prioritizing Safety | "[Cites statistics on violent murders of BIPOC trans people". To be so negligent of the statistics should be criminal."<br>● Negligence, Criminality | Desirable<br>Expected | Undesirable<br>Incomprehensible | Authoritative<br>Passionate | Admonishing<br>Life-or-Death | N/A, not provided | N/A,<br>no video record |

**Table 3.6 cont'd**. Linguistic and Extralinguistic Evidence of *Appropriation*: Beverly, Nerys, Bridget

| Case | Changes to Linguistic Markers | | | | Changes to Extra-Linguistic Markers | | | |
|---|---|---|---|---|---|---|---|---|
| | Word Choice | | Evaluative Orientation (Lemke, 1998 ) | | Intonation | | Gesture | |
| | Toolkit | Testimony | Toolkit | Testimony | Toolkit | Testimony | Toolkit | Testimony |
| Beverly | My rights as a parent of a student in Colorado matter just as much as the parents who have expressed opposition to these revisions.<br>• Parent<br>• Rights | As a white parent…standing here…I felt that everything drafted in the K through five standards was appropriate.<br>• Parent<br>• Appropriate | Obvious, Serious | Probable Appropriate | Unapologetic | Scolding, Challenging, Assertive | N/A, not provided | Stares directly at member who characterized standards as inappropriate<br><br>Circles hands and points back down to indicate where she is standing |
| Nerys | Our school district is diverse. Diverse students should be represented in the standards.<br>• Our District<br>• Diverse<br>• Should<br>• Represented | One of the things I value most about District [S] is the diversity in the student body. In fact, I value that far more than standardized test scores. But if that diversity isn't talked about, learning opportunities are lost.<br>• Value<br>• Standardized Tests<br>• Lost opportunities | Important, Appropriate | Unimportant (standardized tests) Desirable | Appreciative, Matter-of-fact | Informative Personal Inspiring | N/A, not provided | Looks up from notes and across the dais<br><br>Puts hand on heart |

## Appropriation: Making the Toolkit One's Own

The remaining cases illustrate the speakers' *appropriation* of the #RestoreTheRevisions Toolkit (Table 3.6).

### Speaking As LGBTQ & BIPOC People and Former Students

#### *Case: Melora*

**Background.** At the time of their interview, Melora (they/them) was 19 and a new college student. Disabled, lesbian, and queer, Melora had been working as a peer mentor with Full Story Youth Services, a local LGBTQ serving organization that had partnered with the Coalition to sponsor an information session ahead of a September 2022 Board of Education Meeting. Melora grew up and went to high school in one of the most politically conservative counties in the state of Colorado. Leading up to the effort to #RestoreTheRevisions, this county had been at the epicenter of ongoing conflict around the standards. In fact, in addition to drawing on public speaking classes and experiences performing poetry, Melora cited watching their local school board meetings as a source of experience she drew on for delivering their first public comment at the September 2022 State School Board Meeting.

> I believe I've, I've never, like, spoken, at least specifically at a board meeting before. I have probably spoken to politicians in general, even in person briefly, and probably written things too. I have a little bit, like not a lot, but a fair amount of like experience with public speaking. That was the class I was in at the time, and I used to do a lot of poetry readings and speaking about mental health. But that's that. That's more of like, an audience setting, you know. I also watch, or I at least used to watch, like a lot of public testimony, because in my own school district there's a lot of like School Board Local School Board stuff going on right now. And so, there's a lot of public testimony that I've watched. So, I also had experience that way.

**Context for Testimony.** In their interview for this study, Melora recounted that deciding what to say in their testimony "really started with just going over all the resources that #RestoreTheRevisions gave just for public testimony". She remembered texting and emailing

with me as she was preparing, and thinking about what to say or not to say. I recall reminding Melora to use the word standards instead of curriculum -- one of the target board members, a Democrat, but potential swing vote, had been a stickler about this -- but other than that, saying that what they had planned sounded great.

Melora shared their goals for what their testimony would emphasize--their positionality as a Colorado student, and their personal experience realizing they were a lesbian in a context where there was little to no information about queer people available.

> And then yes, I just kind of had bullet points of things that I wanted to touch on, kind of like how hard it was coming to terms with the fact that I was queer in an environment where like, I wasn't taught a lot about it, and just, like sort of different experiences like that. And I wanted to touch on how I was like a recent student in Colorado. I, in fact, like preschool through graduation, have been a Colorado student. So it's. It's very important to my life. You know I owe everything I know almost to Colorado public education.

**Appropriation: Linguistic Marker Evidence.** Melora made use of the suggested structure for testimony that we offered in the toolkit (Figure 3.6).

**Figure 3.6 Melora's Testimony**

| Toolkit Feature | Melora's Testimony |
|---|---|
| <u>When you testify:</u><br><u>Identify who you are:</u> Identify as a constituent with your name and zip code. You can also include identities like LGBTQ, Black, parent, student, voter, educator, etc. [Naming affiliations with groups can at times be helpful, but it is likely most useful to appear as an individual at this point.] | Thank you. My name is Melora. My zip code is _____, and I'm from [Politically Conservative County]. I was recently a high school student, just graduated a couple of years ago, and now I am a college student. I am a part of the LGBTQ community and obviously I am disabled. |
| <u>State your issue:</u> Our issue is restoring the revisions to the Colorado Social Studies Standards. Examples: In 2019, I celebrated the achievement of passing House Bill 1192, ensuring the inclusion of the history, culture, and social contributions of racial and ethnic | So I wanted to come here today and talk to you about House Bill 1192, and ask you to restore the revisions. And I think it's very important that students learn about diverse communities and oppressed peoples, and I wish I had learned about |

**Figure 3.6 Melora's Testimony**

| Toolkit Feature | Melora's Testimony |
|---|---|
| minorities, religious minorities, and the LGBTQ individuals within these minority groups in public school curriculum. If allowed to take effect, recommendations to remove specific references to these groups will have an enormous, detrimental impact to our LGBTQ+ youth of color and all students. | that when I was in high school more. I really didn't learn anything about LGBTQ2IA+ people when I was in elementary school or middle school, and very little in high school. |
| Explain why you care and/or how you are impacted: Share your personal story and/or any facts. | So when I first started to realize that I was a lesbian, it was very hard for me. The night that I realized that I was probably some sort of LGBTQIA2+ I cried, because I didn't know where to go or what to do, or who I was, and it was very scary for me. I think that having education on these topics would help LGBTQIA2+ students [inaudible] with themselves and more accepting of themselves, and help them learn more about other peoples, too if they aren't LGBTQIA2+ or BIPOC or anyone that is under these standards that they should learn about other peoples, too. |
| Make the ask: Use a close-ended question to ask the board. Examples**:** "*Will you commit to restoring the revisions?", "Will you commit to ensuring the revised standards follow the law?"* | Yeah. So I was just hoping that you would commit to restoring the revisions and how these students learn more about that. Thank you. |

They began their testimony by introducing who they were and sharing relevant identities, including their identity as a recent high school grad, and a member of the LBGTQ community. Then they introduced the topic of their testimony, HB19-1192 and the proposed revisions to the social standards, sharing a personal story, and closed with an ask.

Although encouraging people to speak from personal experience was something we prompted in the #RestoreTheRevisions toolkit and info session leading up to the Fort Baker

Meeting, Melora made a substantive appropriation of the sample arguments we offered in the "Customizable Script" section of the toolkit. Consider two examples of sample arguments we made available in Version 1 of the action toolkit when compared to an excerpt of Melora's testimony:

> **Sample 1:**
> "We know that to feel supported and affirmed students must see themselves reflected in the curriculum, and to develop empathy and understanding, students must also learn about those whose identities differ from their own."
>
> **Sample 2:**
> "I am a member of one or more of the groups that have now been erased from the standards and hidden under the generic language of "various peoples and cultures." As a student, I went through school not seeing people like me reflected in the curriculum. I want something different for my children, but the newest version of the standards feels like more of the same."
>
> **Excerpt of Melora's Testimony:**
> "And I think it's very important that students learn about diverse communities and oppressed peoples, and I wish I had learned about that when I was in high school more. I really didn't learn anything about LGBTQ2IA+ people when I was in elementary school or middle school, and very little in high school. So when I first started to realize that I was a lesbian, it was very hard for me. The night that I realized that I was probably some sort of LGBTQIA2+ I cried, because I didn't know where to go or what to do, or who I was, and it was very scary for me. I think that having education on these topics would help LGBTQIA2+ students [inaudible] with themselves and more accepting of themselves, and help them learn more about other peoples, too."

A comparison of semantic markers that convey evaluative orientations to the arguments offered in the toolkit is useful for demonstrating Melora's mastery and appropriation of toolkit arguments (Figure 3.5). The toolkit's semantic constructions emphasized comprehensibility/obviousness, "We know that…", "Students must learn about…" and desirability/inclination, "I want …", and how undesirable the redlined standards were, and how undesirable it would be to go backward,"but…feels like more of the same". Melora also used phrases that communicated the desirability of adopting HB19-1192 aligned standards, "I wish…". But Melora's semantic constructions introduced new evaluative orientations, too, like

importance/significance “I think it’s very important…”, and warrantability/probability, “I think that … would help …” Their argument that “these revised standards will make students feel less scared and isolated” was not one that we provided.

**Appropriation: Extralinguistic Marker Evidence.** Melora’s extralinguistic communication also demonstrates their appropriation of toolkit messaging. In contrast to the implied tone in the scripts that we offered, which was very formal and matter of fact (Sample 1), and assertive (Sample 2), Melora’s approach was conversational, serious while optimistic, aligning with how they wanted to convey their experience as an LGBTQ student in Colorado Schools.

Only briefly glancing at handwritten notes during their testimony, Melora continually looked toward the dais where board members were seated (Figure 3.7).

**Figure 3.7 Melora looks up at the dais throughout their testimony**


At key points, of either seriousness or optimism, Melora made small gestures to emphasize their points. For example, Melora pushed their head forward to punctuate the phrase, “I cried”. This motion brought more attention to the “undesirable” and, as Melora argued,

probable consequence of continuing to omit LGBTQ history from Colorado Social Studies instruction.

**Summary.** Melora's use of the toolkit went beyond mastery of a provided script. They used the toolkit as inspiration for the structure of their testimony, and as starting points for key arguments, but made linguistic and extralinguistic choices that added new arguments in favor of HB19-1192 aligned standards that were not provided by our coalition.

***Case: Sonya***

**Background.** Sonya is a Chicana, a parent, an educator, and a lifelong resident of Colorado. At the time of the campaign to #RestoreTheRevisions, she was a resident scholar with the Queering Education Collective (QEC), and one of the founding members of the LGBTQIA2+ -serving Coalition that organized in support of HB19-1192 and #RestoreTheRevisions. I worked closely with Sonya as we prepared for the community info session and Board Meeting in Lonar.

**Context for Testimony.** As I described when discussing Sylvia's testimony, our coalition knew ahead of the Lonar meeting that the right-leaning board members planned to introduce the American Birthright Standards. We also knew that of the four left-leaning and three-right leaning members of the board, we had likely won the support of three. This meant the final left-leaning board member was a potential swing vote, a fact that Sonya emphasized to the group in the info session ahead of the meeting.

Sonya was intimately familiar with the sample scripts as a co-designer of the #RestoreTheRevisions toolkit. She also had extensive knowledge from prior research about the discourse surrounding HB19-1192 and was very interested not just in fighting *against* the redlines, but arguing *for* the revised standards. One point she hoped to emphasize was that the

proposed standards were historic, in that few if any other states had explicitly written standards that reflect intersectional perspectives. She explained this choice in her interview:

> And the other thing I did want to mention is that, like the facts like this is one of only 7 bills and da da da. That was a lot of work done by [QEC Graduate Student]. She had really tracked the narrative for us, and like what's been going on in the news articles for the last 6 months, and that was really a part of like, this larger policy research project that [QEC Founder] is leading. And so I want to give the facts and all that came from there, and that wasn't you know, on the top of my head. This is the work and blood, sweat and tears of [QEC Co-Founders].

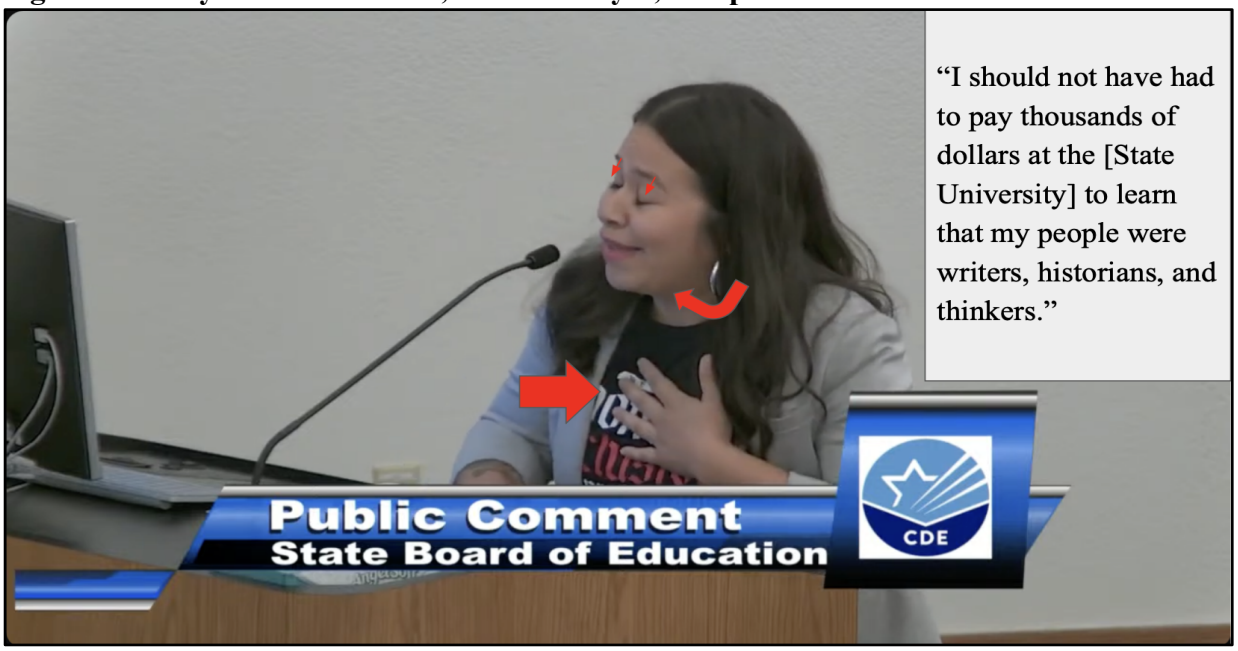
**Appropriations: Linguistic Marker Evidence.** Sonya threaded pieces of the sample scripts we offered in the toolkit with her own main point, that "this was historic!", and board members had a chance to lead the nation in advancing intersectional social studies standards. In the excerpt of her testimony below, I show her phrases that mirror the toolkit scripts in plain text, and underline her additions.

> I'm here today, calling on the Board to restore the original revisions to the history, social study standards and approve any amendments that align with house bill 1192: The Inclusion of American Minorities. As you all know, this is a historic law, one of only seven policies nationwide, and one of the first, if not the first, to to be intersectional by including multiple, historically marginalized communities. This is historic. We have a chance to make history. We know from years of research when students see themselves in the curriculum, they have a higher level of academic success, including higher GPAs and graduation rates, as well as improved mental and emotional wellness, including feeling a sense of belonging at school. Research shows that this is good for all students, not just students listed.

Returning to the evaluative orientations outlined by Lemke (1998) can clarify Sonya's appropriation of toolkit text. For the most part, Sonya sticks with the orientations relating to obviousness and desirability that were already present in the toolkit, but dials it up. Where the toolkit used formulations like, "we know that…" and "these groups must be…", Sonya modified the formulations, "*As you all* know…", "We know *from years of research*…" In instances where the toolkit presented restoring the revisions as desirable, "all students benefit…" (a variation of Sonya's "this is good for…"), Sonya also pushed the claim of just how desirable this was further,

"This is historic", "We have a chance to make history!", "this is…one of only seven policies nationwide". It is desirable to do this because it is the right thing to do, but also because it offers the state of Colorado a chance to lead on this issue.

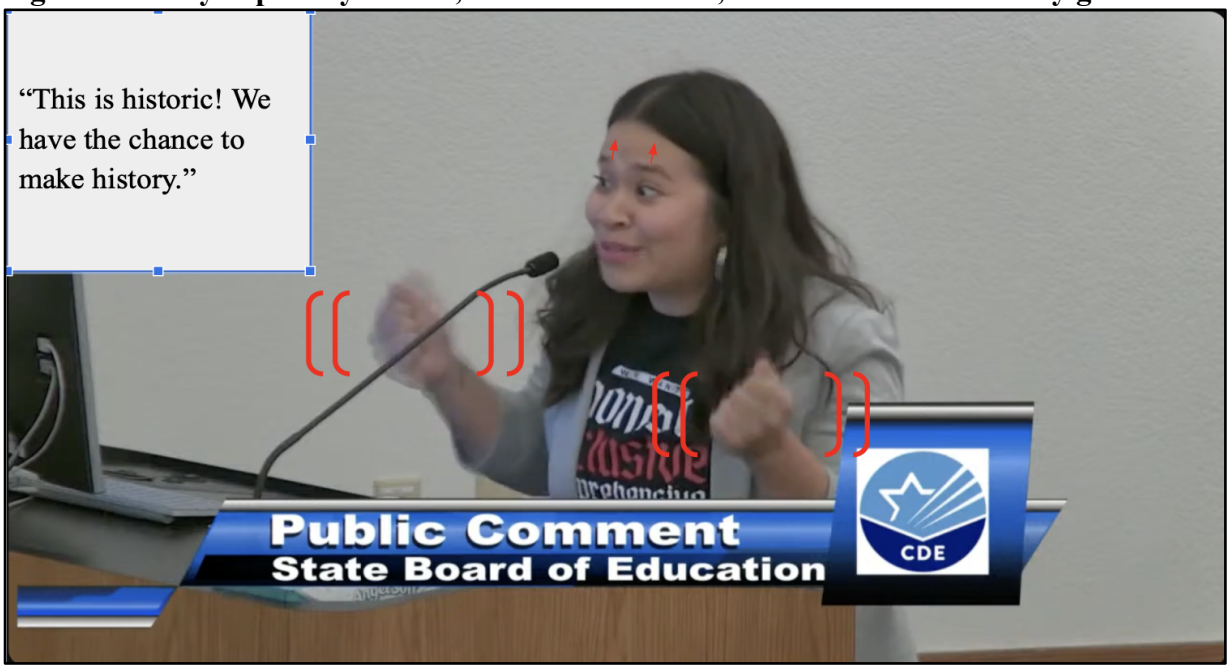
**Figure 3.8 Sonya turns her head, closes her eyes, and places her hand on her heart**




**Appropriations: Extralinguistic marker evidence.** Sonya used multiple gestures to convey her arguments, for example, counting on her fingers the many benefits of ensuring students see themselves reflected in the curriculum, and turning her head, closing her eyes, and placing her hand to her heart (Figure 3.8) when echoing the words of another Chicana speaker who testified before her, "I should not have had to pay thousands of dollars…to learn that my people were writers, historians, and thinkers."

In particular, Sonya emphasized her compelling argument for why the board should support the adoption of HB19-1192 aligned standards by using gesture (3.9). When uttering the sentences, "This is historic! We have a chance to make history", Sonya lifted both hands and shook them in celebration, smiling and opening her eyes wide while looking toward the board members.

**Figure 3.9 Sonya opens eyes wide, looks at the board, and makes a celebratory gesture**




**Summary.** Taking advantage of her fluency in both the #RestoreTheRevisions toolkit scripts, and her own sense of research about the positive impacts of curricular representation on LGBTQIA2+ and BIPOC students, Sonya wove together facts and stats and her personal history to call on the Board of Education to lead the way and "make history". This argument was not featured in the toolkit, and was something Sonya decided to do herself, while still making use of the general structure for testimony offered by the toolkit, and its key refrain "restore the revisions."

**Speaking as a White Parent**

***Case: Beverly***

**Background.** Beverly is a straight, cis, white parent of two ninth graders from a conservative county south of Denver on the eastern side of the Rocky Mountains. A former social scientist, Beverly had followed the standards revision process and even submitted comments on earlier drafts of the standards prior to the release of redline edits and the launch of the LGBTQIA2+ Coalition's #RestoreTheRevisions campaign and toolkit. A Democratic

precinct organizer, Beverly had spoken in public meetings before. When a friend who had attended the #RestoreTheRevisions information session let her know more speakers were needed, Beverly reviewed the toolkit, and asked our Coalition contact to sign her up to speak.

**Context for Testimony.** The meeting Beverly spoke at was significant because it was held in a conservative school district where many presumed locals would applaud efforts to remove references to race and gender in the standards. Partly because of this, Beverly made a choice to emphasize her positionality as a white, straight parent from the area when speaking at the meeting. In her interview, Beverly explains this decision:

> It's using white educated privilege in front of people who don't see and don't want to engage. Again, these old white people in Ratosha County don't want to engage with people. We're getting whipped around by an extremist group, because we think that everything is hunky dory, because we're all white people whose households make over $150,000. But we're getting whipped around, too, right? And we're getting whipped around by people that nobody would respect in any meeting. The people in my community.

Beverly also knew that a particular board member from her home congressional district, would be at the meeting and had an explicit goal to "do some digs on him." She explained:

> I already knew that that [State Board Member from Fort Baker] guy was a jerk who was from [my congressional district] because [Community Activist and Campus Safety Officer] was running for the office a little bit, and then kind of said I'd interact with him 2 or 3 times. [State Board Member from Fort Baker] has no business having a perspective on twenty-first century Ratosha county education. So if he is the representative, I knew I needed to do some digs on him. I did need to do that.

**Appropriations: Linguistic Marker Evidence**. Beverly's appropriation of the #RestoreTheRevisions toolkit is evident in her use of idea of "age-appropriateness", which is deployed over and over again by opponents of LGBTQ inclusion, and specifically by the board member she had identified as her target, and was used as part of the rationale for purging mentions of LGTBQ Coloradans, particularly in the early grades. Turning the notion that the revised standards weren't age appropriate on its head, Beverly repeatedly states that the draft was

"good to go", and that "everything drafted in the K through five standards was appropriate." This talking point did not appear in the #RestoreTheRevisions toolkit, and was something Beverly inserted on her own.

By playing against the prevailing notion that white moms from conservative counties would be opposed to the inclusion of minoritized groups in the standards, Beverly flips the proposition of her support of the standards from being improbable, to being probable, from unexpected, to expected. She knows the messenger matters, and builds credibility for her position on the standards by emphasizing her race, gender, and status as a mom of students in the district.

**Figure 3.10 Conservative board member comments vs. Beverly's testimony**

| **Conservative Board Member's Comments to Chalkbeat Magazine** | **Beverly's Testimony** |
|---|---|
| There is no reason to inflame the divisions, and leaving these discussions of sex out of the classroom does not inflame those divisions. The discussion of sex is more appropriate at an older age. - [State Board Member from Fort Baker]<br><br>State Board Democrats: Keep LGBTQ issues in social studies standards | I read all 147 pages of the November 21 Social science standard recommendations draft and I fully supported the standards then, as written. It was good to go back in November. As a parent, a classroom volunteer for six years in elementary public schools. I felt that everything drafted in the K through five standards was appropriate. I'll say that again, a white mom who lives in Northern Ratosha County in [Conservative Congressional District], is standing here letting you know that the November 2021 draft was good to go. |

**Appropriations: Extralinguistic Marker Evidence.** Driving home her "dig" at her target board member, Beverly added extralinguistic flourish. As she uttered "I'll say that again, a white mom who lives in…", Beverly focused her gaze on the board member. Then, when she said, "is standing here" she moved her hands in a circular motion, indicating herself standing at the podium, then looked directly at the target board director in his district and challenged his characterization of the revisions as inappropriate.

**Figure 3.11 Beverly stares down a board member**


**Summary.** While Beverly signed up to speak in part to respond to our coalitions' call for more speakers, and to advance the passage of HB19-1192 aligned standards, Beverly also had another motive for her testimony, to get some "digs" in on a representative from her area that she felt was not representative of her interests, or qualified to be making decisions about what was happening in 21st century schools.

## Implications for the Design of Scaffolds for Personalization

Learning scientists are concerned with the design of learning environments (Fischer et al, 2018). Some, including myself, are particularly interested in designing for learning toward more just futures. As Curnow and Jurow (2021) citing brown (2017) put it, "the responsibility of Learning Scientists to contribute is not based on an ivory tower assumption that we know better, but that we can know, learn, and co-design something that 'helps us get free'" (p. 15). I now turn to the implications of this study for design of action toolkits and scaffolding for collective action.

In interviews, participants indicated a few things of note regarding the way the toolkit lowered the barrier to entry. First, the sample language and general four-part structure for testimony helped make it easier to get started telling their stories. When we care deeply about things, and matters are life or death, it can be very hard to decide what to say out of all the possible things to say. B'Elanna reflected on this feeling of "[not] even know[ing] what to write about":

> I would agree that it helped me get started, because I remember I was sitting there, and I'm like oh, I don't even know what to write about. I've never done public comment, and I was pretty confused. But looking at that toolbox. It started generating ideas in my mind of what I could speak about.

Though I do not present a full analysis of B'Elanna testimony in this analysis, it is important to note that after getting started, and using the general structure offered by the toolkit, B'Elanna made significant changes to the scripts and brought in new information, drawing in a quote from Trans ancestor Sylvia Rivera, statistics from the Human Rights Council (HRC), and her own personal story of being violently attacked at school to admonish the board for their "criminal" lack of concern for the safety of trans students. B'Elanna reflected on the experience of preparing and delivering testimony at two meetings:

> Those were my first two times giving testimony. It was empowering, because for the first time in my life I felt like I was able to be seen and heard for what I truly had to say in my true honest feelings. A lot of the time I think students are pushed to the side because a lot of people assume they don't know anything about the curriculum they're being taught. But with this, I'm able to speak my mind.

Here, getting started meant getting to the place where B'Elanna could ultimately share her "true honest feelings." Though the toolkit was certainly not the only resource B'Elanna employed when preparing and delivering this testimony, it was a piece she cited that "helped [her] get started."

The toolkit also made it easier for participants to feel informed about the issue and fluent enough in the issue to speak publicly. Nerys explained how the toolkit helped her "make sure I knew what I was talking about." She elaborated on this in her interview:

> I think the biggest thing is that I wouldn't have done it if I hadn't had help understanding what was going on. I, you know I kind of knew, but like for someone to actually be like this is the process. This is the house bill. This is so, you know. Make sure that I knew what I was talking about, and that's helped me figure out locally how to get people to participate more because people don't want to look like idiots. So I mean you really have to do that work of saying, here's what's going on now, add your story to that, here you go, you know that was really powerful.

Beyond using the toolkit to become proficient in the language associated with the bill and issue at hand, the way Coalition members shared information to continually update the toolkit with the latest logistical information also saved users time and energy that would otherwise have been spent determining meeting times, locations, and processes for signing up for comment. Melora described this in their interview:

> #RestoreTheRevisions as a movement in the organization of people supporting it, was very helpful just to have communication. I think people who have been to board meetings before and know, like the layout and stuff like that was very helpful. I know [Staff Member at Full Story Youth Services]. They were there like outside, just having people around to help navigate how to get in there, and like I'm not sure if it was you or someone else who signed up people who couldn't be there early. But that was. Yeah, that was extremely helpful.
> It's all just so complicated, and sometimes it feels unnecessarily complicated. But I think just like supporting each other however we can. And whatever knowledge will have just sharing it. So like, if someone knows like you know, this is the entrance, or this is the time we show up just like dispersing information is very important.

And still, there were important shortfalls on this front. Melora elaborated on the need for information about accessibility in their interview:

> [Something] a lot of people don't have to think about or maybe don't anticipate is accessibility of meetings and spaces like that, which is something I always have to think about as a wheelchair user and something that kind of adds like a whole other element into this. Because it's not only like, you know. How do I get in? And how do I sign up? But it's like, is there going to be an elevator? You know.

> Will my wheelchair fit through the door? Like, are there going to be too many chairs? Like, can I even get up to the mic? Is the mic going to be too tall for me? Like, and those were issues that day, because there was no accessible path up there, and like the podium. They probably couldn't really see me. So just, keeping that in mind, I think, is a big part of every movement, every organization.

Though I do not go into detail here about the function the toolkit served in terms of logistics, this does I think warrant further attention and research. As Curnow and Jurow (2021) remind us:

> Learning to engage in the mundane—and often gendered and racialized—labor of coordinating group work, building solidarity among diverse members, speaking to policymakers and community members, connecting diverse stakeholders, systematically analyzing data, and practicing affect as a way of knowing and feeling are central tasks of participating in grassroots movements (Curnow, 2013; Kirshner et al., 2011).

Doing the labor of drafting sample scripts, confirming times and locations for public comment, and making sure this information was continually updated were all part of the work I did as a researcher and partner in this effort. If partners ask for this, taking on this labor could be a meaningful contribution and reduce barriers to their participation and expressions of their agency and voice in political processes.

It is exciting to share that the toolkit and information session designs used in this effort have been taken up, adapted by, and iterated upon by other efforts. For example, in 2023, I worked with Grey and partners from Full Story Youth Services to offer a follow up information session for parents in Fort Baker and surrounding areas, including Melora's home county, which experienced backlash after the final standards vote. The approach of combining info sessions with toolkit resources also inspired an ongoing parent advocacy series led by Bridget and Grey in the Northeast Front Range. Finally, after a series of calls where we shared learnings and approaches, some of our tactics were lifted by other movements connected with NYU Metro-

Center, e.g. not just organizing against something, but organizing *for* something, and using customizable scripts in action toolkits.

As social movement organizers develop and deploy action toolkits, learning scientist partners can help build both theoretical and practical knowledge related to learning, development, and the design of such toolkits. Mastery and appropriation of cultural tools could continue to be a lens for this future research, as might sociopolitical development (Watts, Williams, & Jagers, 2003). How might action toolkits support individuals to ask critical question and develop critical social analysis of issues, build collective identity and efficacy, and importantly, to take sociopolitical action toward liberation? (Watts & Hipolito-Delgado, 2015).

## Discussion

Education researchers have played an important role in describing the Conflict Campaign in Education's origins (Kumashiro, 2021) and documenting the impacts (Pollock & Rogers, 2022; Palomar, Jones, & Tanksley, 2022), as well as in creating and distributing practice briefs, e.g. NYU EJROC's 2021 "Winning Racial Justice in Our Schools" toolkit, and the African American Policy Forum's 2021 "Truth Be Told" toolkit. So far, less research has reported on the partnership between learning scientists and educational researchers and everyday people on the front lines of assaults on teaching and learning. This study offers one example of how to study the one such front line -- the everyday space of public comment, an arena that is consequential but fundamentally less researched and well understood than sites of learning like formal classrooms, or even everyday forms of action and organizing that are more radical than the public comment space — eg boycotts, protests, walkouts.

Wertsch's conceptualization of mastery and appropriation of cultural tools, originally formulated to make sense of history, memory, and narratives of national identity, especially in

the former Soviet Union, has been taken up by a wide range of scholars in a variety of fields. While other learning scientists have used mastery and appropriation to talk about the use of scripts when speaking to decision makers in public meetings (e.g. Kirshner & Geil, 2010), Wertsch's concepts around mediated action are more often put to work to understand learning, identity development, and cultural tools in schools and professional learning (e.g. Polman, 2006; Watkins, 2023; Instefjord, 2015). Both this study, and Kirshner & Geil's earlier work suggest that the mastery and appropriation lens could be useful for learning scientists and others who are interested in understanding the learning and development that occurs in sites of collective action, like those that take place in public meetings. The way this effort highlights design features of toolkits that seem to open up possibilities for appropriation of scripted messaging also suggests this framework could be useful in this space not just theoretically, but also in practice.

**Limitations**

There are limitations to this study and further research is needed on the relationship between toolkit scripts, learning, and collective action. First, this research is also based on a fairly small sample, which has implications for generalizability. This was a subset that agreed to the research after the approximately 20 people I contacted, and around 20 more who attended codesign and information sessions. Further, anyone with the link to the toolkit had access to the toolkit ahead of speaking. Our Twitter Page had 40 followers, and our toolkit went out emails to several of the five community organizations who were central to the LGBTQIA2+ -serving coalition. I interviewed eight people, and had enough data to analyze the testimony of seven of those. I also did not analyze any of the written testimony that toolkit users forwarded to the board and bcc'd us on. Therefore, those who opted to participate in my study may have been more

interested in or better prepared to appropriate toolkit scripts, which could have implications for the findings presented here.

Second, this analysis did not look closely at preparation to use the toolkit, e.g. examining how the combined factors of attending a community info session, getting feedback from a coalition member, or other supports may have shaped speakers' success when appropriating toolkit messaging. For example, several people I interviewed had already been following this issue and learning about it from other sources. What I saw as appropriation of our toolkit might also have been mastery of language from other movements or resources, e.g. Red, Wine and Blue in the case of Beverly, or prior research studies in the case of Sonya. Future research could focus on how people who found the toolkit on their own, but who did not attend information sessions or talk with coalition organizers, leveraged the toolkit, and consider the relationship between an ecosystem of support for using the toolkit, e.g. attending information sessions, relationships and conversations with movement organizers or friends, accessibility considerations, and successful appropriation of toolkit messaging. Appropriation of toolkit scripts in written testimony, particularly how users constructed their comments from the customizable sample scripts, could be a very interesting line of inquiry that might build further evidence as to the usefulness of this design feature.

Finally, some readers may be wary of the way action toolkits have supported my own learning and action makes me view them more optimistically than others might, and concerned that my intimate involvement with the development of the action toolkit, delivery of information sessions, and coalition activities may demonstrate bias in my analysis. While this might for some be a cause for concern, I take the perspective that "an engaged stance is not incompatible with good science" (Nzinga et al, 2018, p. 11436). I was not merely concerned with proving what I

already believed, that action toolkits are useful, but in understanding how they are used and how to make them better, which motivated a rigorous analysis.

## Conclusions and Future Research

Political Action Committees (PACs), politicians, and individuals working to restrict teaching about race, gender, and more have made public comment a key arena for the ongoing Conflict Campaign in Education (Pollock & Rogers, 2022). These actors have invested millions of dollars to deploy virtual information sessions, toolkits, and calls to action to mobilize speakers to appear at public comment at the state, district, and school level. With less monetary backing and media attention, those who *do* want young people to engage with more critical perspectives on race, gender, and the nation's history have also worked to develop and deploy information sessions and action toolkits to turn people out to public comment. This analysis focused on one such example, the effort to #RestoreTheRevisions to the social studies standards made in line with a 2019 Colorado Law: HB19-1192, The Inclusion of American Minorities in the Teaching of Civil Government. By resourcing parents, students, and community members with information sessions and a virtual toolkit, we hoped to ensure that mentions of BIPOC and LGBTQ people, which had been stricken from the standards following right-wing scrutiny and coordinated negative comments during a public review period, would be restored and adopted in the final version.

Action toolkits often include sample scripts that toolkit users can read outright or adapt when writing or speaking to their representatives. There are legitimate concerns about over-reliance on scripts in organizing and activism. An over-reliance on scripts absent personal stories raises questions about a person's meaning or authenticity and has the potential for flattening real public discourse into talking points. Still, while cultural tools (Wertsch, 1997; Swindler, 1986)

like action toolkits are “always involved in shaping action”, and shaped themselves by power, those tools still “never mechanistically determine [action]” (p.7). We worked intentionally to design a toolkit that opened up multiple opportunities for toolkit users to adapt sample scripts or add their own messages (Figure 3.1, Figure 3.2).

This analysis revealed examples of mastery of action toolkit scripts. For example, Gray and Sylvia, both Coalition members who were given a script that I prepared using the toolkit, demonstrated mastery by keeping word choice intact, using cues from the script to choose an appropriate tone of voice for delivering the testimony, and using eye contact and changing the speed of speaking to emphasize key points. This analysis also shed light on the way individuals appropriate action toolkits. For example, Melora used the four-part structure we offered for testimony, and lifted some language word for word from the toolkit, for example, the ask, “commit to restoring the revisions”, but also brought their own, stance: that adopting intersectional standards would make growing up “less lonely” for kids like them in the future. Beverly and Nerys emphasized their identities as white parents who *did* want intersectional standards. Speakers also invariably used gestures that were not provided in the toolkit as a means of communicating their points. Thus, speakers’ appropriation of toolkit scripts appears to go beyond personalization, or inserting stories of one's own experiences, and extends into changing the evaluative orientations and arguments being presented via alterations to toolkit word choice and intended tone.

Paying attention to these additional dimensions of making a script “one's own” may help us better understand when and how public testimony effectively persuades decision makers. Building theory and practical knowledge about the design features of toolkits that afford such appropriations could help learning scientists and movement activists to better support broader

publics to act in the public comment space. In other words, it is one thing to tell people that they need to personalize their testimony in order to be heard by decision makers or offer a single box in a form letter. It is another thing to adequately *support* them to do so by offering thoughtfully designed scaffolds. This paper offered examples of how to provide such scaffolds and explored the role of virtual action toolkits that incorporated the design innovation of a customizable script. Movement organizers, and research partners, especially learning scientists, could do much to advance the design and implementation of such supports. While speaking at public comment alone is insufficient for the type of political transformation required in this historical moment, among mounting attacks on civil rights and democracy, better arming people for action in this arena can make what happens in this space a more effective partner to more radical, direct forms of action like protests or boycotts that happen outside it.

## V. Conclusion

As I shared in my introduction, I am a *big* nerd. I have lots of interests and try to carry my theoretical and ethical learning into practice across the contexts in my life. In this dissertation, those contexts included 1) a youth participatory action research project working to uphold its Frierian values around knowledge co-construction as the partnership grew from tens to hundreds of contributors 2) a Research Practice Partnership in the science education space working to enact ideas about good pedagogy in its internal partnership meetings, and 3) the efforts of a self-organized coalition of actors to support community members to deliver personalized testimony in favor of intersectional social studies standards that had come under right wing attack.

I see these studies being connected by a metaphor of learning how to intervene in, and hopefully break, time loops. These loops aren't *literal* repetitions of the same events, but rather, moments of "history repeating itself".

When working to prevent history from repeating itself -- whether it be reverting back to a banking model of knowledge building or losing ground on social justice during a period of organized backlash -- I identified principles, inspired by sci-fi, to guide actions that could work toward "breaking the loop": Raising the alarm that history is repeating itself, or listening to and and believing someone who already is, paying close attention and testing new ways to intervene and change the flow of events, and finally, ensuring a message is delivered that offers a reminder of what is happening, and an idea for what to try next.

In my introduction I foregrounded a particular principle I think is best exemplified by each study. Article 1 is an example of principle 3, ensuring a message is delivered, because while our prefigurative experiment in collaborative data analysis had limited success, it inspired "provocative generalizability" (Fine, 2008), moving us to act and try something new the next

time around. Article 2 is an example of principle 2, pay close attention, by drawing on a primarily descriptive methodology, Ethnography of Communication. And article 3 is an example of principle 1, raising the alarm, because through the collaborative efforts of the Coalition and the creation of an action toolkit, we put out a red alert. We let the broader public know what was going on with the Social Studies Standards adoption process, and resourced them to act.

Still, each study context included elements of each principle. I think it was Ben who first asked me to think about how to design collaborative data analysis sessions to try to get back to our Freirian roots in the Transformative Student Voice (TSV) project. He raised the alarm, and worked with Joanna, Monse, the TSV team and I to plan something, try it out, and get clear on an idea for what to try next.

In article 2, understanding how to better enact ideas about just science teaching and learning in a science education RPP required paying close attention to communicative practices in the team meeting. Ethnography of communication allowed me to perceive our meetings as a cultural space that created, maintained, and could potentially transform the RPPs culture.

Finally, Article 3 highlights a major undertaking of an ad-hoc coalition of LGBTQ2+-serving organizations and individual actors who worked tirelessly to raise the alarm and resource resistance to attacks on the state's proposed intersectional standards. With little time to act, we experimented--quickly developed, disseminated, and continually adapted an action toolkit with sample scripts that potential advocates for the standards could use as a support for delivering written or spoken testimony. Parts of the designed tools seemed to really work, namely the customizable sample scripts, and multiple invitations to make the language presented "your own". Reporting on these efforts is an important part of sending learning on into the future, at a

time when the right wing has vowed to eliminate any kind of teaching about race, gender, power, and oppression in this country.

**Prioritizing Praxis**

In addition to being tied together with the metaphor of breaking time loops, I also want to briefly discuss a unifying motivation for this thesis. A theme across all these studies is on making a difference *now* to the groups I studied. My first priority in all three papers was praxis -- enacting our theories about action, change, and justice more fully. For example, in Article 1, I worked with colleagues in the RPP to design and try out a process for re-engaging in sensemaking around data with students and teachers. We kept detailed notes about our process, reflections, decisions, and iterations, which ultimately allowed us to take this reflective look back, but publishing wasn't on our radar when we started the process. We just wanted to do collaborative data analysis better!

In Article 2, the twin crises of a global pandemic and mounting and persistent racial injustice demanded that our team think about how our internal processes, including team meetings, could better align with our more outward facing ideas about what made for just and equitable science teaching. To aid in that, I wanted to pay close attention to that everyday context. This study was a first foray into that effort, and before deciding if findings from this inquiry could be useful to others and worth sharing more broadly, it will be important to see what the iHub team itself makes of them and how we decide to act to continue to advance coherence, relevance, and contribution in the RPP. I imagine, however, that the constructs of coherence, relevance, and contribution could be useful for other teams working to address inequities in status and authority and that ethnography of communication could offer another way of studying RPP dynamics.

Article 3 tackles praxis in a political context. The work focused on supporting the effort to resist right wing attacks on Colorado's new social studies standards, and had some ideas about what might work based on my own experiences getting support to speak at public comment. In it, I collaborated with an organization that was active in helping restore the new social studies standards that were being challenged. My hope is that what we did together in the #RestoreTheRevisions effort could be very useful to others who continue to organize amidst a global rise in fascism and to academic audiences interested in documenting responses to the current wave of anti-"CRT" laws. My next priority will be reconnecting with Coalition partners to prepare a practice brief that could be disseminated quickly. In each of these instances, advancing praxis required attending to and designing for increased voice and agency. The first two articles focus on practices that advanced voice and agency in research practice partnerships, particularly for RPP members who enter such collaborations with less status and authority due to historic injustices. The third article focused on designing scaffolds to support voice in the political arena of public meetings, aiding broader publics to advocate *for* teaching about race, gender, and power in a time when such learning is under attack.

**Praxis for What?**

For the groups I studied in this dissertation, enacting our theories about action, change, and justice more fully meant working to expand participation in the face of power differences. This conception of participation goes further than "broadening participation", a theme of many STEM initiatives, which focuses on diversifying the workforce for the purpose of maintaining the United States' standing on the world stage. For Transformative Student Voice (TSV), iHub, and the Coalition working to #RestoreTheRevisions to Colorado's social studies standards, expanding participation meant something different.

Rather than a focus on recruiting members from underrepresented backgrounds to the project, expanding participation in the two RPP contexts I studied meant better designing for *existing* members to contribute to collective knowledge building. While these efforts were certainly aimed toward improving the quality that knowledge building (an aim it shares with broadening participation, i.e., "diverse teams produce better results"), the beneficiaries of that knowledge building were the team members themselves. In the case of the TSV partnership, student activists and their teacher coaches used collaborative data analysis to advance their thinking about how to do participatory action research on problems they cared about in their school settings, for example, by considering things like how youth might approach peer mentoring, or how coaches could make space for students to experience "productive failure." For iHub, expanded participation benefited from the contributions of team members who represented different roles and areas of expertise, deepening shared learning that could apply across iHub-affiliated projects. These studies invite teams to not only focus on changing who is in the room, but how to design for the meaningful participation of those who are already there.

Article three offers another take on expanding participation. This context did focus on resourcing and amplifying the voices of parents and students that were being ignored by decision-makers who had voted to cut mentions of minoritized Coloradans from the standards, a goal which shares an affinity with broadening participation in that it is centered on expanding representation in standards and curriculum among groups that are under-represented within decision making conversations pertaining to standards. Here, participants spoke back to the state (elected officials), not working on its behalf, and advocating for what should be taught in schools. To support them, I developed tools to enable them to develop persuasive arguments and enable them to feel confident when presenting in school board meetings, having recognized a

disparity in the information and resources made available to constituencies who do want schools to teach about race, gender, and justice and oppose the white washing of standards and curriculum. Designing resources to expand participation in such circumstances serves the goal of advancing the interests of marginalized communities in policy and decision making, and can inform strategies for weathering and holding ground during periods of massive resistance to progress toward true multiracial democracy.

**Limitations**

Anyone familiar with the time-loop trope in science fiction is very aware that actors trapped in the loop are often stuck there for many, many cycles. I acknowledge in my introduction that linear progress is a myth, and my articles and summary of the principles of breaking time loops may make it seem all too simple. In fact, I don't have to venture far from Article 3's study context to find a clear example of a loop resetting, since following our successful campaign to #RestoreTheRevisions, several districts in the state moved to adopt the white Christian nationalist American Birthright "Standards" in their place.

**Future Research**

Last, I want to communicate the messages about "what to try next" that this dissertation offers. For the first study, my coauthors and I hoped to make our process of designing for and implementing collaborative data analysis more visible, rather than just reporting on findings. We wanted our "behind the scenes" story to serve as an invitation to other RPPs to consider alongside us how caring practices for collaborative knowledge building are designed and enacted, especially for large RPPs with many contributors. I maintain this hope for the article.

The iHub study constitutes another behind the scenes, in depth take on RPP dynamics. This study suggests ethnography of communication (EC) as one more method for engaging in

reflexive self-study, particularly of RPP meetings. It also invites RPPs to consider the ways their theories of change are embodied in the group practices, and discourages a one-size-fits-all approach to advancing coherence, relevance, and contribution for RPP team members. EC might provide another method for attending to ethics and power relations on teams that more easily "flies under the radar" during a period where public school districts and universities are increasingly surveilled and policed around diversity and inclusion policies.

Finally, Article 3 posits some ideas for how researchers might better support the efforts of community organizers and activists with whom they partner, and offers an example of how to study learning from and design for collective action. While speaking at public comment alone is insufficient for the type of political transformation required in this historical moment, the battleground of the public meeting should not be ceded to extremist groups. Building theory and practical knowledge about the design features of toolkits that afford such appropriations could help learning scientists and movement activists to better support broader publics as to take action in the public comment space.

Finally, I hope the metaphor and principles I've outlined with respect to learning to "break" time loops and prioritizing praxis can be put to work in conceptualizing research that is centered on action toward more just futures.

## VI. References

American Civil Liberties Union. (2024). *Writing your Elected Representatives*. Retrieved July 30, 2024, from https://www.aclu.org/writing-your-elected-representatives

American Civil Liberties Union. (2024). *Mapping attacks on LGBTQ rights in U.S. state legislatures*. Retrieved July 30, 2024, from https://www.aclu.org/legislative-attacks-on-lgbtq-rights-2024

Annamma, S.A., Jackson, D. D., & Morrison, D. (2017) Conceptualizing color-evasiveness: using dis/ability critical race theory to expand a color-blind racial ideology in education and society, *Race Ethnicity and Education*, 20:2, 147-162, DOI: 10.1080/13613324.2016.1248837

Antrop-González, R. & De Jesús, A. (2006) Toward a theory of critical care in urban small school reform: examining structures and pedagogies of caring in two Latino community-based schools, *International Journal of Qualitative Studies in Education*, 19:4, 409-433, DOI: 10.1080/09518390600773148

Alexander, M. J. (2005). *Pedagogies of crossing: Meditations on feminism, sexual politics, memory, and the sacred*. Durham, NC, USA: Duke University Press. DOI: 10.1215/9780822386988

Akom, A. A., Cammarota, J. Ginwright, S. (2008). Youthtopias: Towards a new paradigm of critical youth studies. *Youth Media Reporter*, *2*(1), 108–129.

Bang, M., Faber, L., Gurneau, J., Marin, A. & Soto, C. (2016) Community-Based Design Research: Learning across generations and strategic transformations of institutional relations toward axiological innovations. Mind, Culture, and Activity, 23:1, 28-41, DOI: 10.1080/10749039.2015.1087572

Bang M., & Vossoughi, S. (2016) Participatory Design Research and educational justice: Studying learning and relations within social change making. *Cognition and Instruction*, 34:3, 173-193, DOI: 10.1080/07370008.2016.1181879

Barab, S., & Squire, K. (2004). Design-Based Research: Putting a stake in the ground. *Journal of the Learning Sciences*, *13*(1), 1–14. DOI: 10.1207/s15327809jls1301_1

Beauboeuf-Lafontant, T. (1999). A movement against and beyond boundaries: "Politically relevant teaching" among African American teachers. *Teachers College Record,* 100, 702–723. DOI: 10.1111/0161-4681.00013

Becker, H. S. (1998). *Tricks of the trade: How to think about your research while you're doing it.* Chicago, Ill: University of Chicago Press.

Benford, R. D., & Snow, D. A. (2000). Framing processes and social movements: An overview and assessment. *Annual Review of Sociology*, *26*, 611–639. http://www.jstor.org/stable/223459

Bell, D. (1980). Brown v. Board of Education and the interest-convergence dilemma. *Harvard Law Review*, 93, 518-533.

Boggs, C. (1977). Marxism, prefigurative communism, and the problem of workers' control. *Radical America*, 6(Winter), 99-122.

Booker, A. N., Vossoughi, S., & Hooper, P. K. (2014). Tensions and possibilities for political work in the learning sciences. *Proceedings of International Conference of the Learning Sciences, ICLS*, *2*(January), 919-926.

Bookchin, M. (1995). Social anarchism and lifestyle anarchism: An unbridgeable chasm. Oakland, CA: AK Press.

Breines, W. (1989). Community and organization in the New Left, 1962–1968: The Great Refusal. New Brunswick: Rutgers University Press.

Braga, B. (Writer), & Frakes, J. (Director). (1992, March 23). Cause and Effect (Season 5, Episode 18) [TV series episode]. In Executive producer initials. Last name (Executive Producer), *Star Trek: The Next Generation*. Production Company.

brown, A. M. (2017). *Emergent strategy*. AK Press.

Brundin, J. (2022, October 12). Social studies revision roils Board of Education with proposal to use conservative "American Birthright" standards. *Colorado Public Radio*. https://www.cpr.org/2022/10/11/colorado-school-board-social-studies-revision/

Burke, T. "How Dare We Not Take Action?" [Keynote Address] (2023). Dartmouth. https://home.dartmouth.edu/news/2023/01/tarana-burke-how-dare-we-not-take-action

Calderhead, J. (1981). Stimulated recall: A method for research on teaching. British Journal of Educational Psychology, 51:211-217. DOI: 10.1111/j.2044-8279.1981.tb02474.x

Cammarota, J., & Fine, M. (Eds.). (2008). Revolutionizing education: Youth Participatory Action Research in motion (1st ed.). Routledge. DOI: 10.4324/9780203932100

Campanella, M., &; Penuel, W. R. (2021). Design-based research in educational settings: Motivations, crosscutting features, and considerations for design. In Z. Philippakos, A. Pellegrino, &; E. Howell (Eds), Design based research in education: Theory and applications. New York, NY: Guilford Press.

Cammarota, J., & Fine, M. (2008). Youth participatory action research: A pedagogy for transformational resistance. In *Revolutionizing Education: Youth Participatory Action Research in Motion* (pp. 1-11). Routledge Taylor & Francis Group. DOI: 10.4324/9780203932100

Center for Popular Democracy. (2021). *Arrested Learning: A survey of youth experiences of police and security at school. https://static1.squarespace.com/static/601b54abb7de8229ddb416d1/t/606c9982a8f63426e7b83c40/1617729927701/Police-Free+Schools+Final+V4+%281%29.pdf*

Coates, T. (2015). *Between the world and me.* First edition. New York, Spiegel & Grau.

Cobb, P. A., Confrey, J., diSessa, A. A., Lehrer, R., & Schauble, L. (2003). Design experiments in educational research. Educational Researcher, 32(1), 9-13. DOI: 10.3102/0013189X032001009

Coburn, C. E., Bae, S., & Turner, E. O. (2008). Authority, status, and the dynamics of insider-outsider partnerships at the district level. Peabody Journal of Education, 83, 364-399. DOI: 10.1080/01619560802222350

*Colorado Academic Standards for Social Studies: Email Feedback (Received April 1, 2022-April 23, 2022). (2022). In Colorado Department of Education. Retrieved July 30, 2024, from https://www.cde.state.co.us/standardsandinstruction/sspublicfeedbackmay22*

*CRT Forward Tracking project*. (2023, April 6). https://crtforward.law.ucla.edu/new-crt-forward-report-highlights-trends-in-2021-2022-anti-crt-measures/

Curnow, J. & Jurow, A.S. (2021) Learning in and for collective action. Journal of the Learning Sciences. 30:1, 14-26, DOI: 10.1080/10508406.2021.1880189

De Royston, M. M., Vakil, S., Nasir, N. S., Ross, K. M., Givens, J., & Holman, A. (2017). "He's more like a 'brother' than a teacher": Politicized caring in a program for African American males. *Teachers College Record*, *119*(4), 1-40. DOI: 10.1177/016146811711900401

Design Based Research Collective (2003). Design-Based Research: An emerging paradigm for educational inquiry. *Educational Researcher*, *32*(1), 5-8. DOI: 10.3102/0013189X032001005

Espinoza, M.L. (2021), Engrafted kin: Ethics and cognition in scientific and artistic activity. Anthropology & Education Quarterly, 52: 158-186. DOI: 10.1111/aeq.12384

Espinoza M.L. & Padilla-Chavez, A. (2021, Sep. 27). *Exploring the ethics of the Right to Learn Collective* [Guest lecture]. University of Colorado Boulder.

*Equity in Cooperative Learning Classrooms | Complex instruction*. (n.d.). Stanford Graduate School of Education. https://complexinstruction.stanford.edu/about/Equity-in-Cooperative-Learning-Classrooms

Farrell, C. C., Singleton, C., Stamatis, K., Arce-Trigatti, P., & Penuel, W. R. (2023). Conceptions and practices of equity in research-practice partnerships. Educational Policy, 37(1), 200-224. DOI: 10.1177/08959048221131566

Fine, M. (2008). An epilogue, of sorts. In J. Cammarota & M. Fine (Eds.), *Revolutionizing education: Youth participatory action research in motion* (pp. 213-234). New York: Routledge.

Fox, M. (2015). Embodied methodologies, participation, and the art of research. Social and Personality Psychology Compass, 9(7), 321–332. DOI: 10.1111/spc3.12182

Foucault, M. (1920). *Discipline & Punish*. Random House.

Freeman Q., & Jurow A. S. (2018). Becoming a more disruptive teacher. In Mendoza E., Kirshner B., & Gutiérrez K. (Eds.), *Power, equity, and (re)design: Bridging learning and critical theories in learning ecologies for youth* (pp. 35—52). Charlotte, NC: Information Age.

Freire, P. (1970). *Pedagogy of the oppressed*. Continuum.

Garcia, A. & Philip, T.M. (2018). Smoldering in the darkness: contextualizing learning, technology, and politics under the weight of ongoing fear and nationalism. *Learning, Media & Technology*

Geertz, C. (1973). Thick Description: Towards an Interpretive Theory of Culture. In *The Interpretation of Cultures* (pp. 3--32). Basic Books.

Gordon da Cruz, C. (2017) Critical community-engaged scholarship: communities and universities striving for racial justice, *Peabody Journal of Education*, 92:3, 363-384, DOI: 10.1080/0161956X.2017.1324661

Gordon, U. (2017). Prefigurative politics between ethical practice and absent promise. *Political Studies, 66*(2), 521-537.

Gravemeijer, K., & Cobb, P. (2013). Design research from a learning design perspective. In J. van den Akker, K. Gravemeijer, S. E. McKenney, & N. Nieveen (Eds.), *Educational design research* (pp. 73–112). New York: Routledge.

Gutiérrez, K.D., (2016). Designing resilient ecologies: Social design experiments and a new social imagination. Educational Researcher, 45(3), 187–196.

Gutiérrez, K. D., & Jurow, A. S. (2016). Social design experiments: Toward equity by design. Journal of the Learning Sciences, 25(4), 565-598. DOI: 10.1080/10508406.2016.1204548

Gutiérrez, K. D., Jurow, A. S., & Vakil, S. (2020). Social design-based experiments: A utopian methodology for understanding new possibilities for learning. In N. i. S. Nasir, C. D. Lee, R. Pea, & M. McKinney de Royston (Eds.), Handbook of the cultural foundations of learning (pp. 330-347). Routledge.

Hill Collins, P. (2000). *Black feminist thought: Knowledge, consciousness, and the politics of empowerment*. Routledge.

Hipolito-Delgado, C. P., & Zion, S. (2017). Igniting the fire within marginalized youth: The role of critical civic inquiry in fostering ethnic identity and civic self-efficacy. *Urban Education*, *52*(6), 699–717. DOI: 10.1177/0042085915574524

Hipolito-Delgado, C., Stickney, D., Kirshner, B., Donovan, C. (in press). Fostering youth sociopolitical action: The roles of critical reflection, sociopolitical efficacy, and transformative student voice. *Urban Education*.

Hildreth, R. W. (2009). Reconstructing Dewey on power. Political Theory, 37(6), 780–807.

Inclusion Of American Minorities In Teaching Civil Government Act, CO. HB 19-1192 (2022). https://leg.colorado.gov/bills/hb19-1192

Indivisible. *Bird-Dogging Guide: Get them on the record*. (n.d.). https://indivisible.org/resource/bird-dogging-guide-get-them-record

Instefjord, E. (2015). Appropriation of digital competence in teacher education. *Nordic Journal of Digital Literacy*, *10*(Jubileumsnummer), 155-171.

Irizarry, J. (2011). Buscando la libertad: Latino youths in search of freedom in school. *Democracy and Education*, 19 (1), Article 4. Available at: https://democracyeducationjournal.org/home/vol19/iss1/4

Kirshner, B. (2015). *Youth activism in an era of education inequality*. New York, NY: New York University Press.

Kirshner, B. Pacheco, J., Sifuentes, M., & Hildreth, R. (2018). Redefining “the community” in university-community partnerships: Case studies from CU Engage. In B. Bevan and W.

Penuel (Eds.) Connecting research and practice for educational improvement: Ethical and equitable approaches. Cambridge, MA: Harvard Education Press.

Kirshner, B., Hipolito-Delgado, C. & Zion, S. (2015). Sociopolitical Development in Educational Systems: From Margins to Center. *Urban Rev* **47**, 803–808. DOI: 10.1007/s11256-015-0335-8

Kirshner, B., Zion, S., DiGiacomo, D., & Logan, G. (2020). The Measure of Youth Policy Arguments: An approach to supporting democratic participation and student voice. *Democracy and Education.*

Kirshner, B., Zion, S., Lopez, S., & Hipolito-Delgado, C. (2021). A theory of change for scaling Critical Civic Inquiry. *Peabody Journal of Education*, *0*(0), 1–13. DOI: 10.1080/0161956X.2021.1942708

Kumashiro, K. 2021. Understanding the Attacks on Teaching:A Background Brief for Educators and Leaders. SquareSpace. https://www.kevinkumashiro.com/attacksonteaching

Kirshner, B., & Geil, K. (2010). "I'm about to really bring it!" Access Points between Youth Activists and Adult Community Leaders. *Children, Youth and Environments 20*(2), 1-24. DOI: 10.1353/cye.2010.0015.

Ladson-Billings, G. (2006). From the achievement gap to the education debt: Understanding achievement in U.S. schools. Educational Researcher, 35(7), 3-12. DOI: 10.3102/0013189X035007003

Lemke, J. (1998). Resources for attitudinal meaning: Evaluative orientations in text semantics. Functions of Language. 5. 33-56. 10.1075/fol.5.1.03lem.

Lin, C. S., Pykett, A. A., Flanagan, C., & Chávez, K. R. (2016). Engendering the Prefigurative: Feminist Praxis That Bridge a Politics of Prefigurement and Survival. *Journal of Social and Political Psychology*, *4*(1), 302-317. DOI: 10.5964/jspp.v4i1.537

Low, S. 2009. Maintaining whiteness: the fear of others and niceness. Transforming anthropology, 17 (2), 79–92.

Madkins, T. C., & McKinney de Royston, M. (2020). Illuminating political clarity in culturally relevant science instruction. Science Education, 103, 1013-1346. DOI: 10.1002/sce.21542

McKinney de Royston, M., Vakil, S., Nasir, N., Ross, K. M., Givens, J., & Holman, A. (2017). "He's more like a brother than a teacher": Revealing instructor's politicized caring in a program for African American males. *Teachers College Record*.

Mendoza, E., Gutiérrez, K., & Kirshner, B. (2018). *Power, equity, and (re)design: Bridging learning and critical theories in learning ecologies for youth.* Charlotte, NC: Information Age Press.

Meléndez, J. W. (2020). Latino immigrants in civil society: Addressing the double-bind of participation for expansive learning in participatory budgeting. *Journal of the Learning Sciences*, *30*(1), 76–102. DOI: 10.1080/10508406.2020.1807349

Nasir, N. S., McKinney de Royston, M., Barron, B. J. S., Bell, P., Pea, R., Stevens, R., & Goldman, S. (2020). Learning pathways: How learning Is culturally organized. In N. S. Nasir, C. D. Lee, R. Pea, & M. McKinney de Royston (Eds.), Handbook of the Cultural Foundations of Learning (pp. 195-211). Routledge.

Nasir, N. S., Lee, C. D., Pea, R., & McKinney de Royston, M. (2021). Rethinking Learning: What the Interdisciplinary Science Tells Us. *Educational Researcher*, *50*(8), 557-565. DOI: 10.3102/0013189X211047251

National Research Council. 2012. *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*. Washington, DC: The National Academies Press. DOI: 10.17226/13165.

Noddings, N. (1992). *The challenge to care in schools: An alternative approach to education.* New York, NY: Teachers College Press.

Nzinga, K., Rapp, D., Leatherwood, C., Easterday, M., Rogers, L., Gallagher, N., Medin, D. (2018). Should social scientists be distanced from or engaged with the people they study?. Proceedings of the National Academy of Sciences. 115(45). 11435-11441.

Oakes, J., & Rogers, J. (2006). *Learning power: Organizing for education and justice*. New York: Teachers College Press.

Palomar, M., Jones, A., Tanksley, T. (2022). In the Shadow of Violence: Enacting Hope, Healing, and Futurity during the Attacks on CRT. Philosophy and Theory in Higher Education, Volume 4, Number 3, 2022, pp. 125-143(19). DOI: 10.3726/ptihe.032022.0008

Paris, D., & Alim, H. S. (2014). What are we seeking to sustain through culturally sustaining pedagogy? A loving critique forward. *Harvard Educational Review, 84*(1), 85–100. DOI: 10.17763/haer.84.1.982l873k2ht16m77

Patel, L. (2015). *Decolonizing educational research: From ownership to answerability*. London, UK: Routledge

Patterson, A.D. (2019). Equity in group work: the social process of creating justice in a science classroom. *Cultural Studies of Science Education,* 14, 361–381.

Polletta, F. (2002). Freedom is an endless meeting: Democracy in American social movements. Chicago: University of Chicago Press.

Penuel, W. R., Allen, A. R., Henson, K., Campanella, M., Patton, R., Rademaker, K., Zivic, A. (2022). Learning Practical Design Knowledge through Co-Designing Storyline Science Curriculum Units. *Cognition and Instruction*, *40*(1), 148–170. DOI: 10.1080/07370008.2021.2010207

Penuel, W. R., Bell, P., Neill, T., Shaw, S., Hopkins, M., & Farrell, C. C. (2018). Building a Networked Improvement Community to promote equitable, coherent systems of science education. AASA Journal of Scholarship and Practice, 15(1), 30-38.

Penuel, W. R., & Reiser, B. J. (2018). Designing NGSS-aligned curriculum materials. *Committee to Revise America's Lab Report*, 1-51.

Penuel, W. R., & Watkins, D. A. (2019). Assessment to Promote Equity and Epistemic Justice: A Use-Case of a Research-Practice Partnership in Science Education. *The ANNALS of the American Academy of Political and Social Science*, *683*(1), 201-216. DOI: 10.1177/0002716219843249

Pollock, M., & Rogers, J. (2022). The conflict campaign: Exploring local experiences of the campaign to ban "Critical Race Theory" in public K–12 education in the U.S., 2020–2021 Institute of Democracy, Education, and Access, University of California Los Angeles

Polman, J. (2006) Mastery and Appropriation as Means to Understand the Interplay of History Learning and Identity Trajectories, The Journal of the Learning Sciences, 15:2, 221-259, DOI: 10.1207/s15327809jls1502_3

Poynor, R. (2004, April 17). Theory with a small t. *Design Observer*. Retrieved July 23, 2024, from https://designobserver.com/feature/theory-with-a-small-t/2117

Raza, A., Penuel, W. R., Jacobs, J., & Sumner, T. (2020). Supporting Equity in Schools: Using Visual Learning Analytics to Understand Learners' Classroom Experiences. In M. Schmidt, A. A. Tawfik, I. Jahnke, & Y. Earnshaw (Eds.), Learner and User Experience Research: An Introduction for the Field of Learning Design & Technology. EdTech Books. https://edtechbooks.org/ux/supporting_school_equity

Reiser, B. J., Novak, M., McGill, T. A. W., & Penuel, W. R. (2021). Storyline Units: An Instructional Model to Support Coherence from the Students' Perspective. *Journal of Science Teacher Education*, *32*(7), 805–829. DOI: 10.1080/1046560X.2021.1884784

Reiser, B. J., & Tabak, I. (2014). Scaffolding. In R. K. Sawyer (Ed.), Cambridge Handbook of the Learning Sciences (2nd ed., pp. 44-62). Cambridge University Press.

Rogoff, B. (2023). Mutually constituting, fractal: Individual and cultural aspects of holistic process. Review of Research in Education, 47, 60-83. DOI: 10.3102/0091732X231224666

Schwartzman, H. (1989). The meeting: Gatherings in organizations and communities. New York: Plenum Press.

Southern Poverty Law Center. (2023). Moms for Liberty | Extremist Group. Retrieved July 23, 2024, from https://www.splcenter.org/fighting-hate/extremist-files/group/moms-liberty

Sandwick, T., Fine, M., Greene, A. C., Stoudt, B. G., Torre, M. E., & Patel, L. (2018). Promise and Provocation: Humble Reflections on Critical Participatory Action Research for Social Policy. *Urban Education*. DOI: 10.1177/0042085918763513

Sikorski, T. R., & Hammer, D. (2017). Looking for coherence in science curriculum. *Science Education*, *101*(6), 929–943. DOI: 10.1002/sce.21299

Singleton, G. E., & Hays, C. (2008). Beginning courageous conversations about race. In M. Pollock (Ed.), Everyday antiracism: Getting real about race in school (pp. 18-23). The New Press.

*Standards Review Committee - Social Studies | CDE*. (2022). Retrieved July 30, 2024, from https://www.cde.state.co.us/standardsandinstruction/group1-socialstudiescommittee

Strauss AL, Corbin JM. (1990). *The basics of qualitative research: grounded theory procedures and techniques*. Newbury Park, CA: SAGE.

Swidler, A. (1986). Culture in Action: Symbols and Strategies. *American Sociological Review*, *51*(2), 273–286. DOI:10.2307/2095521

Tabak, I. & Radinsky, J. (2014) Social Justice Research in the Learning Sciences, Journal of the Learning Sciences, 23:3, 269-271, DOI: 10.1080/10508406.2014.935130

Tanksley, T., & Estrada, C. (2022). Toward a Critical Race RPP: how race, power and positionality inform Research Practice Partnerships. *International Journal of Research & Method in Education*, *45*(4), 397–409. DOI:10.1080/1743727X.2022.2097218

Tuck, E. and K.W. Yang. (2014b). 'R-Words: Refusing Research' in D. Paris and M. T. Winn (Eds.) *Humanizing Research: Decolonizing Qualitative Inquiry with Youth and Communities*. Thousand Oakes, CA: Sage Publications.

Tuck, E., & Yang, W.K. (2018). *Toward What Justice?* (1st ed.). Taylor and Francis. Retrieved from https://www.perlego.com/book/1562948/toward-what-justice-describing-diverse-dreams-of-justice-in-education-pdf

Theobald, E. J., Eddy, S. L., Grunspan, D. Z., Wiggins, B. L., & Crowe, A. J. (2017). Student perception of group dynamics predicts individual performance: Comfort and equity matter. *PLOS One, 12*(7), 1-16.

The Politics of Learning Writing Collective (2017): The Learning Sciences in a New Era of U.S. Nationalism, Cognition and Instruction, DOI: 10.1080/07370008.2017.1282486

Vakil, S., & Higgs, J. (2019). It's about power: A call to rethink ethics and equity in computing education. Communications of the ACM, 62(3), 31-33. DOI:10.1145/3306617

Vakil, S., de Royston, M. M., Nasir, N. i. S., & Kirshner, B. (2016). Rethinking race and power in design-based research: Reflections from the field. Cognition and Instruction, 34(3), 194-209. DOI: 10.1080/07370008.2016.1169817

Villenas, S. (1996). The Colonizer/Colonized Chicana ethnographer: identity, marginalization, and co-optation in the field. Harvard Educational Review.

Watkins, J. (2023). "That is Still STEM": Appropriating the Engineering Design Process to Challenge Dominant Narratives of Engineering and STEM. *Cognition and Instruction*, *41*(4), 405–435. DOI: 10.1080/07370008.2022.2156512

Watts, R. J., Williams, N. C., & Jagers, R. J. (2003). Sociopolitical development. *American Journal of Community Psychology*, *31*(1), 185-194.

Watts, R. J., & Hipolito-Delgado, C. P. (2015). Thinking ourselves to liberation?: Advancing sociopolitical action in critical consciousness. *The Urban Review, 47*(5), 847–867. DOI: 10.1007/s11256-015-0341-x

Wertsch, J. V. (1997). Narrative Tools of History and Identity. *Culture & Psychology*, *3*(1), 5-20. DOI: 10.1177/1354067X9700300101

Weis, L., & Fine, M. Critical bifocality and circuits of privilege: Expanding critical ethnographic theory and design. *Harvard Educational Review* 1 June 2012; 82 (2): 173–201. DOI: 10.17763/haer.82.2.v1jx34n441532242

Wingert, K., Riedy, R., Campanella, M., & Penuel, W. R. (2020). Equity across state systems: Possibilities and tensions in understanding scale. In M. Gresalfi & I. S. Horn (Eds.), The interdisciplinarity of the learning sciences (Vol. 4, pp. 2453-2460). International Society of the Learning Sciences. DOI: 10.22318/icls2020.2453

Yates, L. (2021). Prefigurative Politics and Social Movement Strategy: The Roles of Prefiguration in the Reproduction, Mobilisation and Coordination of Movements. Political Studies, 69(4), 1033-1052. DOI: 10.1177/0032321720936046

Zinn, H., & Arnove, A. (2015). *A people's history of the United States.* Thirty-fifth anniversary edition. New York, NY, HarperPerennial.

## VII. Appendices
## Appendix A: iHub Meeting Diary

# iHub Meeting Diary

The purpose of this meeting diary is to give the researcher (Melissa Campanella) an idea of what iHub Thursday meetings are like, and what they mean to you and others on the team. Please spend 10 minutes or so at the end of or after today's meeting jotting an entry below, or recording one and uploading it using the form. Please comment on anything you think will help me understand our meetings and the culture of our team.

If you have trouble submitting this form, please share your diary entry as an email to: meca4137@colorado.edu

**meca4137@colorado.edu** Switch account

The name, email, and photo associated with your Google account will be recorded when you upload files and submit this form

* Indicates required question

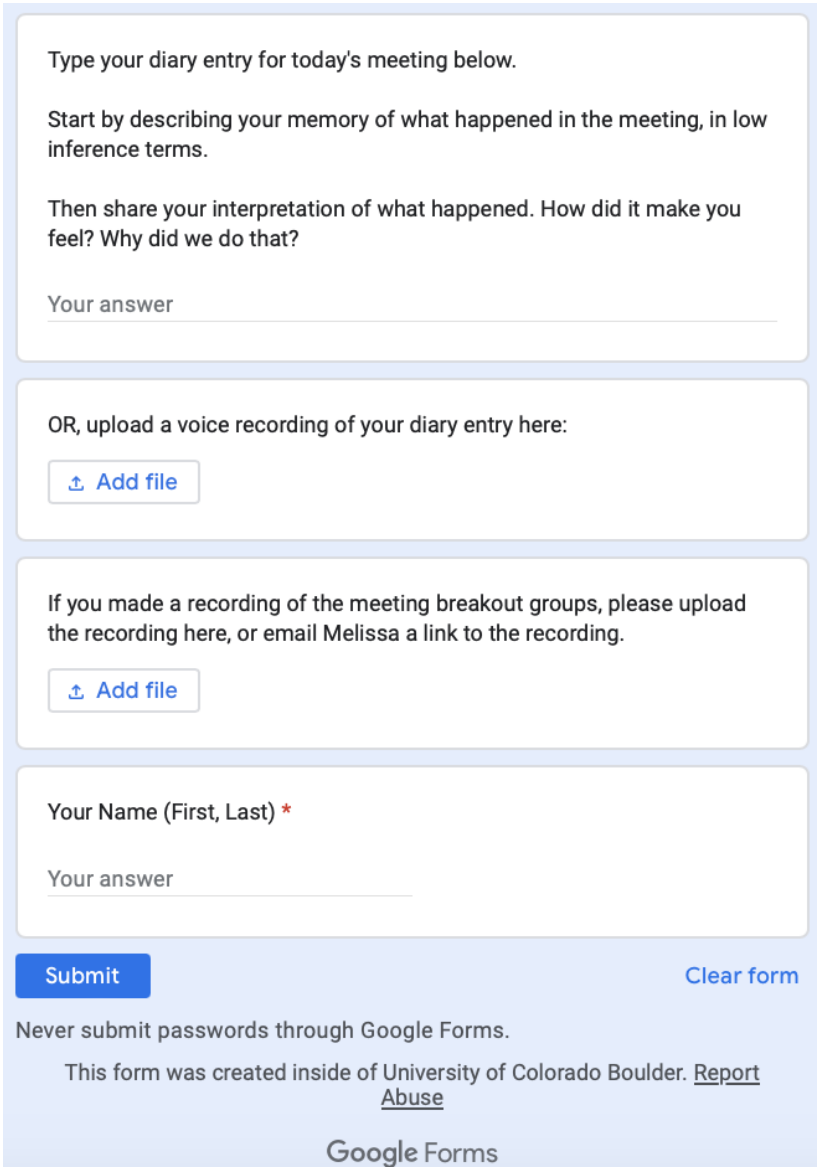
Meeting Date *

Choose

Some examples of types of things I am hoping you will comment on are:

| | |
|---|---|
| Participants | Who was at the meeting? How did people interact with each other? What are the participant's relationships with each other? What roles did they take on (e.g. speaker, note-taker, listener, other)? What are the participants' responsibilities to each other and those outside of the meeting? |
| Channels & Codes | What ways of communicating do we use in the meeting that may or may not be shared by all participants (e.g. speaking, writing, gesture, pitch/tone, jargon, jamboard, other)? |
| Frame | How do we start and end the meeting? |
| Topic & Results | What is our meeting about? What results do you expect from the meeting? |
| Norms of speaking & interaction | What processes do we use for determining how and when people communicate (e.g. turn taking, protocols, etc)? |
| Oratorical genres & styles | What moments of specific forms of speech happened in the meeting (e.g. Jokes, proverbs, presentations)? What styles of speaking did people use (e.g. indirect or direct, other)? |
| Interest & Participation | How do we encourage participation in the meeting? What rewards or consequences are there for participating, or not participating? |

## Appendix A cont'd: iHub Meeting Diary




## Appendix B: iHub Study Follow Up Interview Questions

Opening:

1. To start, Can you say your name, role, and a little about how you came to be a part of iHub?
2. Our RPP has grown into lots of branches, can you give a quick summary of which projects you work on specifically, and what those are about?
3. What happens in our meetings matters to my study but I'm also interested in how people make sense of or connect what we do in the meeting to their lives or work outside of it. Might you talk a little bit about this?

Anti-Racism / Anti-Oppression in iHub

4. Our team has some ideas about what makes for an equitable and anti-racist science classroom like, positioning students as knowers and doers of science, prioritizing phenomenon that are interesting to students whose interests have not been served in schools, making sure students experience classes that are coherent, relevant, and where they contribute to sensemaking, building a classroom culture where students' can draw on their cultural and linguistic repertoires freely and without fear of punishment.
5. Are there ways you see those ideas at play in how we plan for and engage in our Thursday meetings? Or alternatively, are there ways we might be contradicting those beliefs in our meetings? If so, might you give an example?

Emergent Focal Practice 1

6. When watching recordings and field noting our meetings last fall, something that stood out to me is how we moved from alternating facilitators to [PI] for the most part planning and facilitating the meetings.

7. Do you remember when we stopped alternating facilitators and why?
8. What did we do before and how has going back to [PI] leading the planning changed the meeting and our work together, or not?

9. Since making this shift in roles for planning and facilitating the meetings,
    a. What are the meetings usually about?
    b. How does [PI] usually design for people to participate in the meetings?

10. Some people might say that our meetings were more aligned to our vision for equitable science learning when we alternated meeting planning and facilitation. Others might say that while alternating planning and facilitation got more voices in the space, it isn't the only way to position everyone as sense makers and with epistemic agency.
    c. How do you feel about this?

11. How would you say [PI] planning the meetings is related to the rest of what we do in the meeting or what we get out of the meeting? If [PI] didn't plan the meetings, what effect do you think it would have?

Emergent Focal Practice 2

12. Another thing that a lot of people mentioned in the diaries was how our team uses break out rooms and reporting back to the full group in the meetings. And last fall, we specifically tried to use breakouts related to different project strands people were interested in, like AI, assessment, PL.

13. For example, in your meeting diary you said, "[quote from diary]" Might you say some more about either of those examples?

14. When do we usually use the affinity group breakouts and how? What have you noticed about how people usually participate in those breakouts?

15. Can you remember a time when we were using a breakout room and someone did something you didn't expect or you felt was wrong?

16. How would you say the use of the breakout rooms is related to the rest of what we do in the meeting or what we get out of the meeting? If we didn't use the break out rooms, and specifically, the affinity breakouts, what effect do you think it would have?

17. You may or may not remember this, but the team didn't always use affinity breakouts, or even breakouts consistently. Do you remember when we started using them and why? What did we do before and how has adding breakouts and affinity breakouts changed our work together, or not?

Closing:

18. Anything I didn't ask about that you'd think I should have, or would like to share?
19. It's important to me to have a sense of people's positionality. Can you tell me how you describe the identities you hold?

**Appendix C: #RestoreTheRevisions Interview Questions**

1. How did you get involved in the effort to #RestoreTheRevisions to the Colorado Social Studies Standards?
    a. How did you first learn about what was going on with Colorado's social studies revision process and House Bill 1192?
    b. What sources did you go to for information about what was happening and what people were doing about it?
2. I know a little bit about at least some of the actions you took. It's been a while since we were really working on this effort so, let's take a minute to look back. [Share clip of interviewee's video testimony, a copy of their written testimony, an artifact from a community meeting they attended, or Tweets]
    a. What comes to mind for you after revisiting that?
    b. Was this the first time you've done something like that? If not, can you tell me about another time or some of your other work to advocate for BIPOC/LGBTQ students?
3. I really want to understand the steps you took and how it felt to take action, because I am trying to learn how to support others in the future when they want to speak up. So don't mind me if I ask a lot of follow up questions! Let's go back to your efforts with #RestoreTheRevisions.
    a. How did you go about writing/preparing your testimony?
    b. How did you decide what to say? If you used scripts or sample messages, how did you make those messages your own?

c. What resources did you use? Was anything or anyone particularly helpful? How so?
d. How did you figure out where to go to give your testimony, or who and how to send it to?
e. How did it feel to write/send your message? (If there was fear/anxiety or some other feeling that could have stopped the person from doing this) what helped you through that?
f. What might you say you learned from taking this action? About activism, about yourself, about education in our state, anything else?
g. Has this experience changed you in any way? Has this experience affected how you will approach or engage in activism in the future?

4. In November, the board voted to restore most mentions of BIPOC and LGBTQ+ people to the SS standards, and expanded representation to include Native Hawaiians and Pacific Islanders.
    a. How did it feel when you heard the news? What thoughts did you have?
    b. Were you surprised? Do you have any guesses or hunches about why the board voted the way they did?
    c. Would you say your activism made a difference?

5. Looking back at it now, do you have thoughts on what was behind the push to change/reverse (not sure of verb) the social studies standards? Would you draw any connections to national trends in education or politics generally?

6. Are you following any other policies or issues locally or at the state level that will impact LGBTQ and BIPOC students? Can you see yourself sharing testimony again in the future?

7. It's important to me to get a sense of how people on our team identify. Might you share with me your gender and racial identities, and any other identities that are important to you?

8. [Ask the remaining questions if there is time, prioritize asking these questions of highly and moderately active participants]

9. Codesign is often used in education to support the development of curricular materials / etc. It's a process where researchers work with practitioners in a way that both contribute to the final product they are creating.

10. The School Policy Coalition used co-design to create the advocacy toolkits and info sessions that they shared with the community. I'm curious about how codesign might be leveraged to help community orgs, parents, educators, or groups like the Coalition to achieve their goals and help broader publics learn about and get involved in change efforts that will improve minoritized students' experiences in schools, and would love to hear your perspective.

11. What does the term “co-design” mean to you? What was important about the “co” part of co-design?
12. Are there ways you see the codesign work as helpful in supporting the Coalition’s aims / efforts? Can you give a specific example?
13. What did you learn from being involved in the codesign meetings? What did you learn with/from (fellow) codesigners?
14. [Offer links to draft and revised versions of resources] What changes did community codesigners make to our draft resources that you think were important? Why?
15. What do you think went well about the codesign process that the Coalition should consider doing in the future?
16. What do you think we could have done better in the codesign process?
17. What are your hopes for the efforts of the Coalition moving into the next school year and next legislative session

**Appendix D: #RestoreTheRevisions Toolkit**

Bit.ly/RestoreTheRevisions

**Appendix E: HB19-1192 Standards Revision and Adoption Timeline (CDE, 2022)**

| Date Range | Published Standards Revision Calendar | Turning points in movement to #RestoreTheRevisions |
|---|---|---|
| Feb 2019 - May 2019 | House Bill 19-1192: Inclusion of American Minorities in the Teaching of Civil Government introduced, revised, and passed into law, making an appropriation to convene | HB19-1192 enjoys Bipartisan Support |
| Oct 2020 - Jan 2021 | Stakeholders apply for committee membership. | |
| Mar 2021 - Apr 2021 | Public feedback is open for all content area standards in group 1. | |
| Mar 2021 | Committees finalized and begin to meet. | |
| Jun 2021 | HB 19-1192 Commission sends history and civic standards recommendations to the social studies committee. | |
| Jul 2021 - Aug 2021 | Research and benchmark report to be completed. | |
| Jun 2021 - Oct 2021 | Social studies committee considers public input, benchmarking report, recommendations from HB 19-1192 Commission, and requirements of HB 21-1103 for Media Literacy Standards, HB 21-1200 for Financial Literacy Standards, and SB 21-067 for Civics standards. | |
| Nov 2021 | First draft of the social studies standards revisions recommendations presented to the State Board of Education for feedback. | HB19-1192 and revised standards come under right wing attack |

**Appendix E Cont'd: HB19-1192 Standards Revision and Adoption Timeline** (CDE, 2022)

| Date Range | Published Standards Revision Calendar | Turning points in movement to #RestoreTheRevisions |
|---|---|---|
| Nov 2021 - Feb 2022 | First draft of the social studies standards revisions recommendations available for public feedback. | |
| Feb 2022 - Mar 2022 | Social Studies Committee reconvenes to consider public feedback. | |
| Apr 2022 | Summary of public feedback presented to State Board of Education. | Redlined Standards Released |
| Jun 2022 | Final standards revision recommendations presented to the State Board of Education. | Pro HB19-1192 Coalitions form and develop strategies |
| Aug 2022 - Oct 2022 | • State Board of Education meets to consider final recommendations for Social Studies Standards specific to<br>○ Holocaust and Genocide studies (August 2022)<br>○ Personal Financial Literacy (September 2022)<br>○ to Civics and Media Literacy (October 2022)<br>○ to House Bill 19-1192 (November 2022) | Pro HB19-1192 Coalitions and Individuals testify at meetings<br><br>*Period of Study; data sampled from three of four final meetings |
| Nov 2022 | • State Board of Education adopts final Social Studies Standards (November 2022) | Most revisions restored, new HB19-1192 aligned standards adopted |