Deepening perceptions of learning: Studying and designing ethical practice with researchers, teachers and learners

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Abstract: Building on recent efforts to center questions of power and politics within the learning sciences, this symposium brings together a set of papers that seek to analyze and surface the ethical dimensions of human learning. Collectively, the papers ask: What becomes visible, analytically, when we take learning to be politically *and* ethically laden? What do we miss when we don't attend to these dimensions of learning? What does foregrounding ethics mean for how we design and study human learning and meaning-making? Each paper addresses these questions by providing key empirical examples drawn from ethnographic research on the activity, relationality and learning of 1) researchers; 2) teachers; and 3) students. Our analysis is aimed at constructing lenses that challenge the politics of neutrality in research on learning, and that deepen our analytic perception by helping us attune to intellectual and relational dimensions of learning that we may not otherwise see. [150]

Session overview

How do we understand the ethical dimensions of human learning? What is missed when research on learning overlooks the ways all learning environments and everyday learning experiences involve continual forms of wrestling with politics and ethics? Drawing on a range of empirical examples of learning amongst researchers, teachers and students, this session works to illuminate what is gained when questions of ethics are central to how we theorize, study and design human learning.

Building on decades of scholarship examining learning as a fundamentally social and cultural process (Cole, 1996; Gutiérrez, 2008; Nasir, Roseberry, Warren & Lee, 2006), learning scientists have recently argued the need for greater attention to politics and ethics as core dimensions of the empirical phenomena that characterize research on learning (Politics of Learning Writing Collective, 2017). Conceptualizing learning as fundamentally *political* (i.e. power-laden, contested and embedded in broader histories and social structures) has constituted an important intervention in our field, as exemplified through the questions raised by key symposia and invited sessions at recent ICLS conferences. The scholars within this symposium (alongside others) have argued the parallel need to consider learning as fundamentally *ethical* (i.e. imbued with moral questions and concerns, and arched towards the development of more just, healthy relations and ways of knowing).

What potentials does the attunement to ethics make possible? Bang, Faber, Gurneau, Marin & Soto (2015) argue for attending closely to *axiological innovations* in research and design, defined as "the theories, practices, and structures of values, ethics, and aesthetics—that is, what is good, right, true, and beautiful—that shape current and possible meaning, meaning-making, positioning, and relations in cultural ecologies." Zavala (2019) argues for explicit attention to the moment-to-moment and day-to-day development of community and ethical relations as deeply consequential but often backgrounded phenomena within the study and design of

learning environments. In cultural-historical terms, there is a related push to attend to subject-subject relations not only as the grounds for subject-objects relations, but as important learning processes and outcomes unto themselves that shift possible forms of knowing, relating and worldmaking (Bang & Vossoughi, 2016). Others have considered the implications of disciplinary learning for the ethical thinking and relations of learners, such as the ways engineering students in an ethics course reasoned about drone technology (Philip, Gupta, Elby & Turpen, 2018). A tie that binds across these projects is the critique of frames that position learning, disciplinary knowledge production, and researcher-community relations as neutral or benign activities, and a direct engagement with the ethical commitments and responsibilities that shape our work as researchers, educators and designers (Booker, 2016).

Resonant concerns shape the psychological study of moral development, which provides useful lenses for learning scientists working to investigate ethical sense-making. Scholars of moral development and education have focused on the development of virtuous traits in young people (justice, empathy, respect, tolerance), the ontogenesis of reasoning about fairness (e.g. Turiel, 1983), and the ways young people come to engage cooperatively and equitably. Others have focused on the social psychological faculties of perspective taking and "theory of mind" (Wellman, 1992) that are finetuned during childhood, constituting human capacities to empathize with others and exhibit an ethic of care (Gilligan, 1993). Given divergent notions of morality, this field has also been rife with divisions. While some researchers continue to invest in developing a universal notion of morality that could be codified and standardized in learning environments, many anthropologists and ethnographers explore the ethics that are cultivated in particular cultural environments (Nasir & Kirshner, 2003). These approaches often investigate how "guardians of the moral order" (Shweder & Much, 1987) construct historically-developed ethical practices using discourse, storytelling/listening, and ritual. This interdisciplinary and ideologically divergent literature offers important conceptual tools for attending to the ways learning environments can shift learner's conceptions of "the ethical," and expand participation in ethically-laden practices.

Bringing these literatures into conversation, the three papers in this symposium address the following questions: **What becomes visible, analytically, when we take learning to be politically and ethically laden? What do we miss when we don't attend to these dimensions of learning? What does foregrounding ethics mean for how we design and study human learning and meaning-making?** Each paper addresses these questions by providing key empirical examples drawn from ethnographic research on the activity, relationality and learning of 1) researchers; 2) teachers; and 3) students. Interpretive and ethnographic methodologies (Erickson, 1986) are particularly useful for understanding moment-to-moment processes of learning and how they are experienced by participants within local and heterogenous settings. Our examples are drawn from fieldnotes, audio-video and interview data, and our analysis is aimed at constructing political and ethical lenses that help us see dimensions of learning that we may not otherwise see (Goodwin, 1994). We begin with a focus on the ethics of researcher learning as a thread that weaves across the three papers.

Each paper also wrestles with what we call a politics of neutrality. In foregrounding the ethical dimensions of learning within particular contexts, we run the risk of reproducing the idea that *some* learning (namely that which explicitly addresses social issues, or work that takes place in particular communities) raises political and ethical questions more than others. Instead, we consider the implicit methods or practices in our field that routinely background ethics and politics within studies of learning. We work to challenge and undo persistent assumptions of neutrality that can delimit the empirical grounds of research, and reproduce the idea that universalist studies of learning that overlook socio-political context or the ethical values shaped by community histories and dreams could alone do the work of producing just forms of educational activity.

Paper 1: Ethics and researcher learning

Ananda Marin, Kyle Halle-Erby, Nikki McDaid-Morgan, Meixi, Caroline Collins, Angela Booker, and Megan Bang

Across generations communities have engaged in knowledge building utilizing diverse methodologies to develop stories/theories for the way the world works. Researchers in academic settings are similarly positioned to engage in knowledge building - however we argue that relational responsibilities have largely been muted in academia. Taking into consideration the various phases of research (research design, consent, data collection, analysis, reporting), we reflect on our continuous development as researchers working toward reimagining sustainable relationships and futures between human beings and the lands and waters we live upon, or what Kimmerer (2013) calls re-story-ation.

Storywork as Method for Researcher Learning. The work of engaging in storylistening and storytelling, or storywork, is both subject and method in this paper (Archibald, 2008). We aim to engage in a praxis-oriented process to articulate a set of principles that address the unique learning demands of being a scholar engaged in

community-based work across settings. To do this, we rely on Indigenous research methodologies that privilege conversational and talk story approaches (Archibald, 2008 ; Kovach, 2009; Wilson, 2008). Through multiple group conversations we engaged in back and forth discussion about key moments of our learning as researchers that were ethically and politically laden. Our process included perspective taking where we encouraged each other to reflect upon the stories that were offered from the outside-in as well as the inside-out. Looking from the outside, we examined the stories from the perspective of the different roles we hold, including, researcher, designer, teacher, student, participant, collaborator, friend, confidant, and kin. Looking from the inside, we reflected on the ups and downs of our own development as researchers by re-telling the stories from the perspectives of our interlocutors. Through this process we developed dimensions of researcher learning that are attuned to the ethical and political. We offer four organizing dimensions as a beginning framework for researcher learning. We illustrate each dimension with a story that is reflective of instances where we ourselves have engaged in the practice of researcher learning. These dimensions express our hopes for researcher learning and are grounded in our understandings and readings of Indigenous and Black Studies systems of knowledge and intellectual traditions (e.g., Tuck & Yang, 2016).

Dimension 1: Researcher Learning in Heterogeneous Collectives (Told by Kyle Halle-Erby, Ananda Marin, and Megan Bang). This first dimension is illustrated by a case where we (Kyle, Ananda, and Megan) reflect on our participation in a series of joint conversations that become source material for a graduate student project that Halle-Erby carried out for an apprenticeship-based, qualitative research methods course. The project was designed to address the following questions: (1) How can heterogeneous (e.g., multi-racial, multi-ethnic, intergenerational) research collectives engage Indigenous epistemologies and Indigenous research methodologies in ways that account for ethical, political, and land-based relations? (2) How do educational researchers engaging with decolonizing methodologies understand the relationships between land, race, and indigeneity? As a practice toward grace, we engaged this tension by tracing the shared commitments and intellectual genealogy of Black and Indigenous methodologies. Critical Indigenous methodologies (Brayboy, Gough, Leonard, Solyom, & Roehl, 2011) and Black feminist thought (Hill Collins, 1990) converge in their shared commitment to re-claiming scholarship as a mechanism to accurately depict the worlds that Black and Indigenous peoples inhabit, from the power structures that constrain us to the methods of resistance and resurgence that sustain us. Beyond depiction, these critical frameworks demand that research participate in the shared project of addressing our most pressing challenges. In this case, we offer our process of tracing Black and Indigenous intellectual genealogies as a mechanism for engaging tenets of Indigenous scholarship with intention and accountability.

Dimension 2: Researcher Learning as Reciprocal Gift Giving (Told by Meixi). In the quest for knowledge production, research has historically perpetuated intellectual extractivism that removes relationship (Klein & Simpson, 2017). Through a process of reflexive listening, I (Meixi) deepened my own understanding of researcher learning as gift giving and receiving. In my research with a Hmong family in northern Thailand, my desire to resist extractivism also perpetuated capitalistic and colonial enclosures. One experience was with the Paj at their mango farm, where we took up the role of storylisteners, a role akin to witnesses who "store and care for this history they witness, and most importantly, to share it with their own people when they return home" (Grant, n.d). The Paj family wanted to gift us, the researchers and teachers, three bags of mangoes. I then asked Pan, the mother, "How much is it?" She responded saying "We don't want your payment." I insisted, saying "We can't do that", with Pan repeating, "No, we don't want it." In the end, we accepted her gift of mangoes. Although Pan wanted to gift us mangoes, in my efforts to resist extractivism, I unethically insisted on buying and compensating her and the family for the mangoes we harvested on our walk. While notions of capitalism, gifting, and compensation are complex and complicated, Pan was teaching me that there are possible ways to do research as reciprocal gift giving. This deepened my own sense of responsibility to those stories because it carried relational understanding of research that follows and listens to the axiologies of those we work with, and how to have relational grace with ourselves and with others as we become researchers-storylisteners-storytellers.

Dimension 3: Researcher Learning as Design (Told by Angela Booker & Caroline Collins). There is now a substantial tradition at the intersection of the study of learning environments located in community, daily life, and informal learning environments and design-based studies that produce or curate learning environments. This study navigates design intersections and diversions between a university practicum course in a subsidized apartment complex's learning center and the community-as-learning-environment. When identifying everyday contexts that placed democratic practice in tension with authoritarian tendencies, housing precarity emerged as a collective concern. Given this concern and our history of relational work, our community partners invited our institutional support while frequently rejecting our research proposals, resisting relational mismatches or conditions too personal for direct undergraduate participation. Our analysis reveals how researcher learning as storywork carried us from rejected designs to a community quilting project that met residents' needs and goals by situating practice within the community environment yet adjacent to the practicum. Our learning demanded new

forms of methodological rigor that acknowledged, with ethical bravery, histories of institutional hand-waving toward community commitment that prioritized research output independently of long-term community needs.

Dimension 4: Researcher Learning in Relationship to Places and Histories (Told by Nikki McDaid-Morgan). In the role of educator, I (Nikki) draw on my own research to teach and embody ethical practices. This case highlights the opportunities for researcher learning that accompany making ourselves vulnerable as we engage storywork to examine the axiological, ontological and epistemological dimensions of research (Archibald, 2008; Brayboy, 2005; Marin & Bang, 2015). I present an autoethnographic account of a time when I used story in a guest lecture in an undergraduate class on ethics and human development. In my lecture, I invited the students to storylisten as I told a creation story from my tribe that was both appropriate for the time of year (winter) and for non-Shoshone-Bannock audiences. After the story a student raised her hand to point out the irony she perceived in telling an Indigenous story in a settler institution. "Why is it ok to tell a creation story here?" Reacting to this student, who I still have a good relationship with, my initial thought was, 'why *do* I think it's okay?' I responded by talking about theories of change — some people push for change within institutions and some people push for change from outside of them. After the experience, I thought a lot about this moment. If there is no place for my stories in the academy, is there also no place for me? For any counter-hegemonic stories? I learned through meditations on this a re-grounding of my *place* in the academy. Stories are my axiological, ontological, and epistemological grounding — my theories — for engaging with the world, and they belong in the academy as much as I do. As researchers doing work that is counter-hegemonic, and in my case, working towards the resurgence of Indigenous lifeways, we must bring our whole selves to our work. Stories open the imagination to thinking about futures where our stories, like us, are not out of place but in place. Building Indigenous futures requires that, and my student's question re-grounded this for me.

Paper 2: Ethics and teacher learning

Arturo Cortez, Paula Hooper, and Natalie Davis

Recent work in the learning sciences has highlighted the importance of designing for ethical and political forms of relationality (Philip, Bang, & Jackson, 2017). In the fields of teacher learning and teacher education, these frameworks and conceptions have sought to re-imagine the current technocratic regime that has undermined not only the development of teachers' pedagogical imagination (Dominguez, 2019), but has relegated indigenous and everyday cultural practices to the margins of society. As design-based researchers and teacher educators, our work involves supporting the learning and development of teachers as learning scientists, adhering to ethical and political commitments. In this respect, we focus on the role of pedagogical tools and reflective practices that leverage teachers' agency in broader learning ecologies. Here, we draw on Escobar's (2017) notion of the pluriverse as a "world where many worlds fit" to animate the design of ethical, expansive and transformative forms of teacher learning. Our work aims to provide teachers with opportunities to jointly imagine and bring into being new systems that privilege epistemic heterogeneity (Roseberry et al, 2010) and communal autonomy (Escobar, 2017; Bang & Vossoughi, 2016).

We present three analytical cases (Yin, 2003) from our individual design-based work with novice and practicing teachers. Here, we draw on the notion of designing for the pluriverse to examine how teachers learn to (1) create new concepts that concern expansive forms of learning and the necessity of heterogeneity, (2) foster new relations between learners and theorize about pedagogical design and, (3) appropriate pedagogical and reflective tools that foster "creative autonomy, social equity, and well-being, including collective control over energy and work" (Escobar, 2017, p.9). The paper is organized such that each case privileges one of the aforementioned concepts, drawing substantive connections to others where appropriate. We describe in brief the context of the cases that comprise our multi-site study of ethical design and teacher learning.

The first case is grounded in a public university classroom setting. Students were either practicing or aspiring teachers, and were pursuing a degree in creative and innovative education. The majority of teachers (85%) identified as African American and all worked extensively with children from non-dominant communities. Davis was the lead designer and instructor for the graduate level course. The overarching goals and characteristic features of the course included inquiries into topics like *decolonial pedagogical innovation* (Domínguez, 2019), *afrofuturism*, *critical sociocultural perspectives on learning*, *making/tinkering* and the *ethics/ethos of care* (Gilligan 1977). We foreground design insights gained from analyzing information sources in conjunction with a major assignment that invited educator-students to visit and compare a formal "makerspace" with a second site where they perceived "learning, creation and/or making is happening." Evidenced by the diverse selection of learning environments to study (e.g. subway station, farmer's market, garden), student work samples and in-class debrief, we found that student-educators in the course shifted in their conceptualizations of learning and making.

We comment on the ethical implications of teachers growing in their ability to "see" and design from the premise that rich forms of learning and making are always present in everyday interaction.

The second case is formed from analyses of interviews, discussions and projects that emerged during a summer course in Foundations of Computational Thinking. Participants were innovation coaches and practicing teachers in a school district that recently implemented a 1:1 computing initiative, and after-school educators in a computational making program. The course was designed for teachers to engage in and reflect on their own learning; it was also designed for them to read and discuss key theoretical texts in order to form ideas about their teaching. For example, the teachers developed their own understanding of constructionism through creating projects using computational tools such as *Scratch* and robotics while reading seminal texts such as Mindstorms by Seymour Papert. Yet I (Hooper) found that what they learned *about learning* spilled out beyond recognizing the utility of new technological tools. In interviews, teachers commented that they came to understand the importance of technology being "tools to think with" rather than tools for students to learn *about*. Participants came to see digital tools as transitional objects that supported generative movement of thought back and forth between abstract ideas and concrete interactions with tools and materials. Others asked, "Why didn't we learn this way of thinking about learning during our teacher education process?" and expressed how the course design opened up new worlds and a sense of pedagogical agency (Gutierrez & Jurow, 2016). Teachers also gained a new ethical orientation to learning that involved owning what it means to theorize and fashion their teaching based on their own ideas about how learning is grounded in multiple contexts and cultural experiences. In other words, teachers claimed their value as theorists and designers of learning. They developed the idea of pedagogical design *as* inquiry, a way of thinking and relating to STEM ideas that inform how teachers examine and design the teaching that unfolds with students. Teachers were not seeing theory as something separate from them, and from their practice. This case examines how political and ethical views of learning emerged for teachers as evidenced in their shifts in understanding the nature of teaching and what it means to become a teacher.

In the final case, a novice teacher learned how to design for ethical and expansive forms of classroom dialogue as he engaged in mediated praxis (Gutiérrez & Vossoughi, 2010). In particular, tools of reflection provided him opportunities to identify how institutional demands were in opposition to the value systems that characterize sociocultural theories of learning and literacy development from his teacher education course. Specifically, he identified that he was expected to engage in whole-class discussion which led him to admonish students who were engaged in "cross-talk." He leveraged his reflections and video-based analyses as tools to mediate how his administration saw youths' everyday linguistic and cultural practices as consequential forms of learning in the class. This case examines how pedagogical tools were appropriated to re-mediate systems of activity in the classroom, as well as in the school. In this respect, the tools that support teacher learning can support teachers in developing new practices that bring together theory, research, and practice, helping school administrators see the resources that non-dominant youth bring to the classroom.

Paper 3: Ethics and student learning

Shirin Vossoughi, Allena Berry, Kalonji Nzinga, Priyanka Agarwal, Alexis Papak, and Kelsey Tayne

This paper looks closely at the ethical dimensions of student learning and meaning-making across a range of disciplinary settings (literacy, mathematics and STEAM/Making) serving youth and young adults from historically marginalized backgrounds. We ask: 1) What are the ethical consequences of knowledge production for students? When and how are ethical and disciplinary knowledge treated as separate and/or interwoven? 2) What forms of political-ethical becoming emerge for students over time?

Question 1 guides us to consider what it can look like when designs for learning treat ethical and disciplinary knowledge as fundamentally interwoven and support learners in wrestling with the ethical dimensions of their ideas, questions and inventions. This strand aligns with growing efforts to desettle disciplinary learning and build designs premised on the epistemic heterogeneity and political-ethical complexity of disciplinary domains (Agarwal & Sengupta Irving, 2019; Bang, et. al., 2012; Davis & Schaeffer, 2019). Question 1 also supports a second move: how are questions of ethics also present within learning moments and environments that do not take an explicit ethical or political stance? Toggling between these perspectives allows us to name the forms of professional vision (Goodwin, 1994) and listening needed for researchers to see and hear the ethical dimensions of learning and the analytic and pedagogical yield of such perception.

Question 2 attunes us to the ways disciplinary learning is always entangled with the development of learners as social and political actors. Here we seek to understand the specific relationships between new forms of meaning making and shifting social relations (with others, with artifacts, with the natural world, with oneself), and the ways students narrate those shifts as windows into their felt experience of political-ethical becoming. We argue that close attention to the ethics of learning opens up much wider views of the "outcomes" or fruits of

learning, and how they matter to learners themselves. Linking together questions 1 and 2, we seek to understand human meaning-making itself as an ethical practice, one that cannot be divorced from the concerns and values of young people as thinkers and relational beings.

Our first case is drawn from a study of the role of written feedback on first generation and low income students' development within the context of a university pre-enrollment program focused on writing. We (Berry, Vossoughi & Nzinga) highlight one student (Remi's) writing, the feedback she received on that writing, and her post-program interview to analyze how she narrated particular forms of political-ethical learning and becoming. Specifically, we look at how the feedback relation between Remi and the instructor who commented on her work mediated a growing effort on Remi's part to use course concepts to critically reflect on her everyday life. These emerging shifts came together in a particularly salient experience that Remi described as a "drenched in learning" moment. Remi narrated how engaging with William Labov's critique of deficit views on African American Vernacular English (AAVE) led her to recognize her own diminishing attitude towards her brother's use of AAVE. Remi called her brother to apologize, leading to a shift in relations that we recognize as a marker of political-ethical becoming. In addition, we consider how the deficit ideologies Remi was wrestling with might be traced to prior learning environments where such ideologies were invisibilized as normative. We contextualize Remi's case in the larger corpus of data, and consider how learning scientists can expand our view of outcomes to attend to learner's ethical and political growth.

Our second case is drawn from a micro-ethnographic study of young adolescents' *doubts and musings* as related to their engagement with mathematical artifacts. The context included 7th/8th grade students who were historically labeled as low-achieving and sorted in low-tracked classrooms within an already segregated neighborhood school serving working-class Latinx communities. Two different pedagogical contexts (task-based paired interviews n=64 and classroom setting observations n=56) were designed to elicit students' doubts and musings about the artifacts. Through iterative coding of students' utterances and written work, I (Agarwal) found that students had three kinds of mathematical doubts: pragmatic, analytic, and transformative. While analytic doubts directly related to the mathematical properties of the artifacts, pragmatic and transformative doubts expanded the typical boundaries of what gets posed and solved in low-tracked mathematics classrooms. Students' pragmatic doubts (47% of total student doubts in the interviews, and 16% in the classroom) were concerned with what the artifacts were for, what significance they had in real-life contexts, and what it meant to craft a new math problem. These doubts were positioned by the teacher as less math-worthy. This negative re-positioning did not, however, spur students to express more presumably relevant analytic doubts. Instead, it led students to disengage from the given task. I argue that the students faced erasure of their epistemic agency and early repression of self-generated opportunities that hold potential for developing their ethical thinking vis-a-vis mathematics. I conclude by considering how students' ethical thinking can be nurtured along with their creative thinking in mathematics.

Our final example considers students' ethical meaning-making around technology and invention within a summer STEAM program that served Black and Latinx 6th graders. The focal lesson we (Papal and Vossoughi) analyze was organized around a discussion of the ways inventions can both help people and hurt people. During the discussion, students immediately made connections between the ways drone technology is used to surveil and bomb other countries and the use of police technologies to surveil their own communities. One student also responded that the Army uses drones "in their wars," revealing how he was ethically positioning himself as separate from the nation-state. Later during the activity, we asked students to close their eyes as we narrated the story of a child who was targeted and killed in a drone strike in Yemen. During this moment, a normally loud and talkative group fell silent as they engaged in the collective witnessing of this child's story and afterwards expressed ethical outrage at the ways institutions failed the child. We contrast these ethically complex and counter-hegemonic forms of meaning making (and the designs that supported them) with moments in which youth were racing drones the day prior. In both cases, students were making sense of drones ethically, whether by learning to treat technologies that do harm as benign toys, or by making sense of the ways drone technologies subject communities to harm. We argue that both orientations towards technology engaged youth in different forms of political and ethical becoming.

References:

Agarwal, P., & Sengupta-Irving, T. (2019). Integrating Power to Advance the Study of Connective and Productive Disciplinary Engagement in Mathematics and Science. *Cognition and Instruction*, 1-18.

Archibald, J. (2008). *Indigenous storywork: Educating the Heart, Mind, Body, and Spirit*. Vancouver, Canada: University of British Columbia Press.

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.

Bang, M., and S. Vossoughi. 2016. “Participatory Design Research and Educational Justice: Studying Learning and Relations within Social Change Making.” 34 (3): 173–193.
Bang, M., Warren, B., Rosebery, A. S., & Medin, D. (2012). Desettling expectations in science education. *Human Development*, *55*(5-6), 302-318.
Booker, A. (2016). Ethical commitments in community-based research with youth. *Mind, Culture, and Activity*, *23*(1), 15-27.
Brayboy, B. M. J. (2005). Toward a Tribal Critical Race Theory in education. *Urban Review, 37*(5), 425–446. https://doi.org/10.1007/s11256-005-0018-y
Brayboy, B. M. J., Gough, H. R., Leonard, B., Solyom, J. A., & Roehl, R. (2011). Reclaiming scholarship: Critical Indigenous research methodologies. In S. D. Lapan, M. T. Quartaroli, & F. J. Riemer (Eds.), Qualitative research: An introduction to methods and designs (pp. 423–450). Jossey-Bass.
Cole, M. (1998). *Cultural psychology: A once and future discipline*. Harvard University Press. Collins, Patricia Hill. "Black feminist thought in the matrix of domination." *Black feminist thought: Knowledge, consciousness, and the politics of empowerment* 138 (1990): 221-238.
Davis, N. R., & Schaeffer, J. (2019). Troubling Troubled Waters in Elementary Science Education: Politics, Ethics & Black Children’s Conceptions of Water [Justice] in the Era of Flint. *Cognition and Instruction*, 1-23.
Domínguez, M. (2014). Teacher sense-making and the social imagination: Remediating the tensions of teacher’s learning within the Pedagogical Imaginary. University of Colorado.
Domínguez, M. (2019). Decolonial innovation in teacher development: praxis beyond the colonial zero-point. *Journal of Education for Teaching*, *45*(1), 47-62.
Erickson, F. (1986). Qualitative methods in research on teaching. In M. C. Wittrock (Ed.), Handbook of research on teaching (pp. 119-161).
Escobar, A. (2017). *Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds*. Duke University Press.
Fricker, M. (2007). *Epistemic injustice: Power and the ethics of knowing*. Oxford University Press.
Fung, H. (1999). Becoming a moral child: The socialization of shame among young Chinese children. *Ethos*, *27*(2), 180–209.
Gilligan, C. (1977). In a Different Voice: Women’s Conceptions of Self and of Morality. *Harvard Educational Review*, *47*(4), 481–517.
Goodwin, C. (1994). Professional vision. *American anthropologist*, *96*(3), 606-633.
Grant, L. (n.d.) Musqueum First Nation, Vancouver, B.C.
Gutiérrez, K. D. (2008). Developing a sociocritical literacy in the third space. *Reading research quarterly*, *43*(2), 148-164.
Gutiérrez, K. D., & Jurow, A. S. (2016). Social design experiments: Toward equity by design. *Journal of the Learning Sciences*, *25*(4), 565-598.
Kimmerer, R. (2013). Braiding sweetgrass: Indigenous wisdom, scientific knowledge, and the teaching of plants. Minneapolis, Minn.: Milkweed Editions.
Klein, N., & Simpson, L. B. (2017, June 24). On extractivism: A conversation with Naomi Klein and Leanne Simpson of Idle No More. Rapid Shift. http://www.rapidshift.net/on-extractivism/
Kovach, M. (2009). Indigenous Methodologies: characteristics, conversations, and contexts. Toronto: University of Toronto Press.
Marin, A., & Bang, M. (2015). Designing pedagogies for Indigenous science education: Finding our way to storywork. *Journal of American Indian Education, 54*(2), 29–51.
Nasir, N.S., & Kirshner, B. (2003). The Cultural Construction of Moral and Civic Identities. *Applied Developmental Science*, *7*(3), 138–147.
Nasir, N. S., Rosebery, A. S., Warren, B., & Lee, C. D. (2006). Learning as a cultural process: Achieving equity through diversity. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (pp. 489–504). New York: Cambridge University Press.
Philip, T. M., Bang, M., & Jackson, K. (2018). Articulating the “how,” the “for what,” the “for whom,” and the “with whom” in concert: A call to broaden the benchmarks of our scholarship.
Philip, T. M., Gupta, A., Elby, A., & Turpen, C. (2018). Why ideology matters for learning: A case of ideological convergence in an engineering ethics classroom discussion on drone warfare. *Journal of the Learning Sciences*, *27*(2), 183-223.
Politics of Learning Writing Collective. (2017). The learning sciences in a new era of US nationalism. *Cognition and Instruction*, *35*(2), 91-102.
Shweder, R., & Much, N. (1987). Determinations of meaning: Discourse and moral socialization. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Moral Development through Social Interaction* (pp. 197–244).

Smith, L. T. (1999). *Decolonizing methodologies: Research and indigenous peoples*. London and New York: Zed Books Ltd.
Tuck, E., & Yang, K. W. (2016). What justice wants. *Critical Ethnic Studies*, *2*(2), 1-15.
Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge: Cambridge University Press.
Wellman, H. (1992). *The child's theory of mind.* Cambridge: The MIT Press.
Wilson, S. (2008). *Research is Ceremony: Indigenous research methods*. Nova Scotia: Fernwood Publishing.
Yin, R. K. (2003). *Case study research and applications: Design and methods*. Sage publications.
Zavala, M. (2018). *Raza Struggle and the Movement for Ethnic Studies: Decolonial Pedagogies, Literacies, and Methodologies*. Peter Lang International Academic Publishers.