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The Impact of Teacher Identity on Curriculum Design

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This thesis, written under the direction of the candidate's thesis advisor and approved by the program chair, has been presented to and accepted by the Department of Education in partial fulfillment of the requirements for the degree of Master of Science in Education.

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The Impact of Teacher Identity on Curriculum Design

By

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A culminating thesis submitted to the faculty of Dominican University of California in partial
fulfillment of the requirements for the degree of Master of Science in Education

Dominican University of California

San Rafael, CA

May 2021

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Abstract

The iterative process of identity building that educators experience in the broader expanse of their lives directly impacts their pedagogical decisions and preferences. In addition, educators' relationship to place can be a significant factor in curriculum design in how they make connections between the classroom and the spaces their lives inhabit. A review of the literature looks at limits to the current educational system, transformative practices being implemented, as well as how natural and human systems function in an educational context. Qualitative research was conducted using phenomenological interviews to better understand the multiple factors that influence teacher identity. Teacher identities extend beyond the role they play in the classroom to encompass the larger breadth of their lives, and include such influences as prior careers, motherhood, mentors, and the places they have inhabited. The concept of a school being an example of a human system is explored. Findings include the existence of intersectional identities, influence of place, both as location and in relation to others, on identity formation, and the significance of human systems towards sustainable educational reform.

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Chapter 1: Introduction

Every day about 56.4 million students in the U.S. go to school and encounter a series of lessons that have been chosen for them and encounter a series of lessons that have been chosen for them (<https://nces.ed.gov/fastfacts>). They may or may not question the curriculum design decisions of their teachers and administrators, but if they did, I would hope they would ask, as I do, Who decides-what is taught in schools? This question is central to education reform, as the cultural and ethical values guiding curriculum vary widely in the field of public education. Recent changes to history and science standards in California, as well as current mounting racial and environmental issues, have left many teachers seeking updated content and pedagogy. While most teachers have a variety of mandates to teach what their districts dictate, many also seek out professional development, peers, or other educational institutions to provide support in venturing outside or away from established parameters. Ultimately, in some form or another what is taught in classrooms is rooted in and inflected by teachers' professional identities, and constantly influencing how they decide to teach what they teach.

I set out at the beginning of the year to document a process of curriculum formation, as I was part of a NOAA (National Oceanic and Atmospheric Association) grant with a group of educators, working on developing inquiry and place-based learning through the lens of the river otters in the local watershed. I thought I would look at the ways in which participants' identity as a teacher and relationship to place intersect to inform how we developed a curriculum and worked together. However, this shifted when I realized that we weren't really developing a curriculum, so much as a way to approach teaching and learning. By learning about river otters through the process of inquiry and using strategies

and tools from both *Ambitious Science Teaching* and Berkeley's Understanding Global Change model, we were able to develop or deepen our understanding of inquiry, as well as the complexity of the NGSS standards and crosscutting concepts. I realized I wanted to understand how to get more people involved in place-based, student-centered learning, and doing so required a better understanding of how participants' backgrounds and personal experiences led to this approach to teaching and learning in the first place.

Statement of Purpose

Despite progressive approaches to education, there is a lack of focus on teachers and the choices they ultimately make in the classroom. In my research, I was committed to moving from a perspective of “damaged centered research” to one of “desire based solutions” (Tuck, 2009). According to Tuck (2009), damage centered research “looks to historical exploitation, domination and colonization to explain contemporary brokenness, such as poverty, poor health,” and this “oppression singularly defines a community” (p. 413). She goes on to claim, however, that “desire is assembled...the picking up of distinct bits and pieces that become integrated into a dynamic whole” (p. 418). Tuck's orientation towards desire based solutions to research is aligned with the work of Friere (*Pedagogy of the Oppressed*, 1970), hooks (*Teaching to Transgress*, 1994), and Orr (*The Earth in Mind*, 1994) in that each of them honors the collective whole, be it a human system, a community, or a natural ecosystem, to provide the information needed to move forward. Each of these theorists explore how our identities are shaped by the places where we are located, as well as the role or position we hold in that place, and how these identities have the potential to shape a transformative worldview.

Friere critiques the “banking model” of schooling, which is defined by the transfer of knowledge from teacher to student in a one-way orientation. In this model, the teacher is the sole authority and the student merely a passive vessel waiting to be filled. Friere uses this model to critique the educational system as a whole, in the way in which it maintains the status quo, and proposes instead “problem-posing” education which focuses on the needs of the student and community (Friere, 1970). In this model the teacher is a co-creator of the learning, and thus orients themselves as mentor and fellow learner instead of the “sage on the stage”. However, this requires a significant identity shift for educators, as it goes against the dominant approach to teaching within our society.

Despite a longer history of understanding the role of teacher identity in the classroom, few studies have explored the iterative process of identity formation among teachers or the critical importance of understanding teacher identity, especially in relationship to the spaces teachers and schools inhabit. My research seeks to understand how a teacher's identity—that is, who we think we are—influences how we teach, and to provide ethnographic research on identity formation in order to better understand the impact of positionality on curriculum choice and pedagogical approach.

Overview of Research Design

I used a qualitative methodology with both a transformative and constructivist worldview, a collective research position that advocates for underrepresented populations to speak to and help create a more just society (Creswell & Creswell, 2018). The open-ended interviews of research participants took place online, during the COVID-19 pandemic. The participants were all white, middle class, cis-women, with either a Master's degree or PhD, chosen from a regional science-based curriculum grant. When I reached out

to the county office of education to see if there were any projects that could be the focus of my research, they connected me with their curriculum director, who then invited me to join the planning group for the summer institute, which consisted of teachers, administrators, and members of local educational institutions. I wanted to understand the causes of identity formation from the viewpoint of educators, so I asked them to explain their own identity and their relationship to place. I interviewed five participants for three, 30-60-minute interviews in order to develop opportunities for deeper understanding and clarification. I chose Siedman's (2019) model of phenomenological interviewing, specifically because this explores "the meaning of people's experience in the context of their lives"(p. 21). Though I added in questions specific to my research, I generally followed his suggested sequence of interviews: 1) "Focused Life History" where participants were asked to share the story of their childhood and early educational experiences, 2) "Details of Lived Experience" where participants were asked to detail a typical day in their current position, and 3) "Reflection on the Meaning" where participants were asked to reflect upon how their early childhood experiences may influence their day-to-day decisions (p. 21-23). If participants did not speak to their identity formation or their relationship to place, I asked these questions specifically. I also asked each participant at the start of each interview if they had any reflections between interviews, and almost all of them had follow-up thoughts based upon prior interviews.

My driving research question was: How do elements of teacher identity affect the process of curriculum design? I further broke this down into two essential questions. The first was, "How do various stakeholders designing an environmental education curriculum

understand the intersectionality of self and place?” The second asked, “In what ways are teachers aware of how their core beliefs and identity interact with teaching?”

Summary of the Research Findings

Three major findings emerged through this research. Foundationally, teachers’ spoke to a sense of intersectional identity inclusive of who they are as people of the world, and that this broader sense of being informs and supports how they engage in the practice and space of learning. Second, it was found that place plays an important role in the formation of identity. The research participants felt that the places to which they had travelled and the places they have inhabited shape the networks and systems to which they connect in learning as well as the natural world. The third major finding is that human and environmental systems provide a wealth of assets that can support equitable educational reform, including during such times as a pandemic. And even during a period of remote learning, due to the pandemic, teachers found ways to reconstitute and reinhabit space for themselves and their students.

These findings demonstrate that while many formative life experiences affect teachers’ perspectives about their role as a teacher, sexism played a central part in the identity formation of most of my participants. These experiences influenced the way my participants approach both curriculum and pedagogy in that they wanted to shift the expectations for girls in our society, as well as to change the classroom dynamics to be more equitable and inclusive. In addition, my findings demonstrate that natural systems, defined as the outdoor spaces frequented in their formative years, influenced the identity of these educators. Teachers who are afforded the privilege of exposure to natural spaces held greater value for the environment, and were also more comfortable teaching about

them. Finally, my research illustrates that teachers are embedded within the *human* system of school. The influence of human relationships and personal interactions on teachers' sense of their identity was put clearly into focus as teachers were required to teach “out of place” during the stay at home order as a result of the COVID-19 pandemic. The physical place of a school positions teachers within a human system of relationships, and support structures that greatly define their daily work, as well as creates their “work identity”. In addition, by understanding the human system, educators can more effectively deliver professional development to provide transformative change to the school environment.

Significance of the Study

This study advances the scholarly research available to date by providing qualitative research on teacher identity formation in order to better understand the impact of teacher positionality on curriculum choice and pedagogical approach. Teacher identity is central to which curriculum is taught, and the level of fidelity to which it is implemented. Though most schools follow a prescribed curriculum, such as Bridges Math, or Lucy Calkins Readers & Writers Curriculum, or Foss Science, or National Geographic History, teachers have to make any number of modifications to these curricula on a daily basis in order to accommodate student need, the time constraints of the day, or to make connections to other studies. In addition, teacher identity influences the minute to minute decisions about how to respond to students in the classroom, and these small decisions create a classroom culture that becomes the norm of the group.

The implications of this research invites teachers to bring who they are as citizens of the world to the environment of learning, and to situate the wisdom of their lived experience as foundational in the creative development of curricular experience. The

findings also suggest that teachers should expand the place of learning to include natural environments that extend around and through the community of the school, inclusive of watersheds, trails, estuaries, desert landscapes, for what Friere (1970) called “problem posing education.”

From a policy perspective, the educational system must recognize that the backbone of identity formation informs pedagogy and curriculum, and that by developed processes for self-reflection positionality can be understood in liberatory and authentic practices to support students in similarly bringing their whole selves to the classroom. These opportunities for reflection should be integrated into curricular reform and professional development.

This study centers the value of lived experiences in teacher preparation, and demonstrates the importance of re-envisioning the role of the teacher in the classroom. We need to value the prior knowledge of both students and teachers instead of limiting them to a narrow identity, such as what a “good” teacher should do, and what a “good” student should do. We need to shift the educational system from a deficit model to an asset model, from a damage-centered approach to a desire-based outcome. The perpetuation of this binary, good/bad, either/or model is reductionist, and perpetuates the oppressive status quo that I believe is at the root of our cultural and environmental issues. A deeper understanding of the role of teacher identity in curricular decisions and pedagogy has the potential to transform the educational system through teacher training and school policies that focus on the assets and desire of communities rather than deficits and damages. In order to do this we must move from a linear model to a collaborative model, one that values listening and building mutually agreeable solutions with the people and issues as

they are in real time. My hope is that the COVID-19 pandemic and the disruption to the "business as usual" approach within the school system has the potential to retool the system with greater cultural and environmental focus. To that end, my findings advance equity and social justice in education because they provide evidence for why curriculum should be centered on teacher and student identity, and explores how identity boundary work could be used in both student and teacher education towards transformative ends.

Chapter 2: Literature Review

This literature review explores three themes central for understanding the role of teacher identity in the curricular and pedagogical decisions teachers make every day in their classrooms. In what follows, I first discuss some limits of common curriculum-based approaches to all content areas drawing on current educational practices. Second, I move to a discussion of positive ways to present and deliver curriculum that provide progressive approaches to learning that radically differ from commonplace, traditional approaches to teaching and learning. In this section, I will provide a particular focus on the relationship between natural and human systems in order to illustrate the value of parts toward sustainability of the whole. In the final section of the literature review, I explore how teacher identity shapes what teachers choose to teach and how they choose to teach it.

Limits of the Current American School System

The oppression of human and natural systems in schools and our culture at large are rooted in a capitalistic system that prizes productivity and efficiency above all else—even human and natural life. According to Uitto (2019), “Many decision makers both in the public and private sectors appear to believe that what can not be measured in monetary terms is not worth anything” (p. 50). At the county and district level, administrators make decisions about how to deliver instruction, including the adoption of statewide curriculum that covers the standards and prepares students for state testing, in order to produce students capable of producing economic goods and services. District and site administrators select the curriculum and professional development they want their school to follow, and provide training, resources, and ongoing support for teachers to continue to

stay within this adopted curriculum. This falls under what Freire (1970) would call the banking concept of education, whereby “knowledge is a gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing” (p. 72). This process tends to lead to “learning silos,” or the compartmentalized, organized, and safe distinction between content areas, which is also easier to test. Friere (1970) goes on to say that, “projecting an absolute ignorance onto others, a characteristic of the ideology of oppression, negates education and knowledge as a process of inquiry” (p. 72). By leading with a checklist of all of the things a student does not know, the value of the process of inquiry is discounted by administrators, who focus on the destination, not the journey; the product, not the process.

There are real socio-political obstacles to place-based and problem-posing approaches to learning. For instance, the use of the local environment as the phenomena for a science lesson may bring up complex issues school and district stakeholders don’t want addressed, so standardized curriculum adoptions provide “less messy” and politically safer means for organizing class instruction. For example, if the study of the American diet in a biology class includes a critical analysis of the carbon footprint of beef, this may upset local cattle ranchers who may have children in the district.

In addition, there is research demonstrating that there is disproportionate participation between rich and poor, white and POC, urban and rural people in both outdoor learning activities as well as field sciences (Carlone, 2015). Educators understand the economic value of science and math education in light of the students meeting productive standards in society and there has been and increased focus on outdoor education and STEM learning lately, but most education still centers on ‘marketplace

reforms', which seek to prepare students to be producers of economic goods and services by building the educational agenda around "business principles of efficiency, accountability, quality, and choice," as well as presumed deficits in these areas, all of which disproportionately marginalizes the lived realities of poor students, students of color and immigrant students (Gutiérrez, 2008; Tan & Calabrese, 2018). According to Anyon (2006), systemic, sustained improvements to schools come through federal and local policies, yet many of these policies merely "maintain minority poverty" (p. 54). For example, urban areas with a low tax base yield less money to be spent on education. This is not a new problem, but one we have yet to adequately address. Public policy inadequately supports the economic and social opportunities for families in these low tax base areas and communities, let alone the reform of schools and curriculums that often suffer from overcrowding and lack of resources (Anyon, 2006). The existing public and educational policies and structure lack the deep listening needed to truly understand how and why the system works the way it does, who it benefits, and how new policies could most effectively assist these communities in solving recurrent problems.

Transformative Pedagogies

There have been and continue to be many suggestions for curriculum design that take a more progressive and transformational approach to education. At the heart of both inquiry and identity work are learning design principles as they apply to "equitable engagement, among them the need for a collective, playful, and generous orientation...that embraces a diversity of definitions of science, quality, and intelligence" (Martin et al., 2018 p. 37). By expanding our definitions of learning and education, we are able to include greater possibilities, as well as embrace diversity in thought and person. A beginning would

be to reframe the concept of intelligence. Intelligence can be displayed across a spectrum of talents. For example, one student may score as reading below grade level but have the capacity to draw complex three-dimensional shapes, whereas another may read above grade level but be unable to solve more basic math problems. Both students show gifts above their perceived levels, yet fall short of expected standards in other areas for their respective ages or grades.

Central to this reframing is to orient teaching and learning around constructivism, which honors the prior knowledge of each student, as they act to build their own understanding through lived experiences. Friere (1970) notes that, “Knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world, and with each other” (p. 72). This reflects the innate curiosity that children hold, that we try to cultivate and encourage, because it is this inner drive that propels learning unbidden.

Practical Strategies

There are many practical strategies that can be applied to the classroom to promote transformative education. We need to shift from “is the teacher doing particular things to support learning?” to “are students experiencing instruction so that it is conducive to their growth as... thinkers and learners?” (Schoenfeld, 2020, p. 10). The focus on “big ideas and student sense-making” provide a common focus for educators across disciplines and grade levels (Schoenfeld, 2020, p. 11). The earlier we can expose students to real life inquiry that requires drawing from multiple content areas, the better prepared they will be for the challenges we can not even guess they will encounter in their lifetimes. As Orr (1994) argues how to rethink education, “the way in which one learns is as important as

the content” (p. 14). He goes on to reflect upon how even the physical spaces and the architecture in which learning occurs can influence a structured pedagogy.

Student Identity. One suggestion for how to better position students for transformative learning is to honor the identity of each member of a learning community, as one would value the unique parts in a system. Greeno (2002) explores the concept of “intellective identities”, which is rooted in “identities... co-constructed by that person and the other people he or she interacts with in socially organized activity” (p. 1), and applied to the identity developed in the classroom. He goes on to say, “the central aim of the class’s activity is to construct understanding and knowledge as products of its collective and individual experience and reasoning.” (p 5). The value of an individual’s prior knowledge furthers the constructive and critical conversation that emboldens action and brings about positive change. This creates the “duality of wokeness,” both as a form of self-empowered liberation, and as a harsh awareness of the large systems of oppression (Ashlee et al., 2017). Thus, a group of students can collectively construct both an analysis and a critique of their neighborhood, a local system in which they are all experts.

Student Voice. Another progressive strategy is to empower student voice, and use the power of education to transgress boundaries that alienate students inside and outside of the classroom. The author and educator bell hooks reflects on the interplay of anti-colonial, critical, and feminist pedagogies, and highlights education as a form of action. In her 1994 book *Teaching to Transgress*, hooks embodies this praxis by deeply reflecting on her practice and how she has brought about transformative change within her classrooms and educational institutions by centering student voices. Freire (1970) also discusses the larger global fight against oppression by centering critical consciousness, the goal of which

is the co-creation of a democratic society, and promoting an engaged pedagogy to counteract the banking model through dialogue that promotes equity. This presupposes that there must be genuine care and respect between participants within the educational environment, which necessitates acknowledging the value of divergent perspectives in a conversation. Each person must question what they know and realize that through continuously evolving dialogue, existing thoughts will change and new knowledge will be created in a dialogic spiral (Kinloch & San Pedro, 2014). Establishing the value of divergent perspectives in order to further one's own thoughts and knowledge again speaks to the need to shift from a deficit to an asset based model of education.

Another practical method of transformative learning is to bridge the gap between content-specific language and student language, as this divide is often hard to close and leaves certain groups of students out of the conversation, because they don't have the "right" vocabulary. A good example of this is AAVE, African American Vernacular English, which has been controversial in its acceptance as a language (Wolfram, 1998; Rickford, 1999). Currently, teachers decide what the knowledge markers are for inclusion in the learning group, yet teachers and learners can expand the parameters in order to include more diverse thoughts at the table (Grinath & Southerland, 2019).

Authentic Learning. Another compelling strategy is a mini-lesson to support acquisition of sub-skills amidst a larger collaborative project. This reorients learning from a series of building blocks towards a concrete goal into a 'learn by doing' process that cultivates authentic learning. For example, "Just-in-Time" STEM activities were used to teach sub-skills needed to complete a project in an after school maker space (Tan & Calabrese Barton, 2018). These activities were in response to student need, rather than

driven by teacher need. When students ran into a problem they couldn't solve, they were able to get a short how-to, and get back into the project. This type of activity promotes student-centered and driven exploration to solve a problem in a situational context, with the teacher as a guide, not leader. By doing this, students' interests and backgrounds are honored and valued, with additional skills being taught as needed. Education is not a linear process, and yet many students get caught up in the minutiae and lose their curiosity and drive in an effort to get it "right." Teachers can avoid this lag in students' curiosity and offer support by giving on the spot lessons without slowing down the creative process.

Systems Thinking and Standards

Intentionally shifting all instruction to include and draw from systems thinking helps to deepen the connections students have to the natural world, and to the human and natural systems of which they are a part. Based on the intersectionality of all life forms and systems on Earth, we can connect student learning to these natural systems and environments, and ground it firmly in the understanding of systems thinking. We live in a closed system, and every move we make has an impact (Orr, 1994).

The California Environmental Principles and Concepts (EP & Cs) have made inroads into this work by providing targeted learning principles that can be applied to both physical and social sciences through the study of systems thinking. For example, EP&C Principle 2 - People Influence Natural Systems states that, "The long-term functioning and health of terrestrial, freshwater, coastal, and marine ecosystems are influenced by their relationships with human societies." (*California's Environmental Principles and Concepts*, 2020). One application of this work is in the understanding of the natural systems, such as the Nile River ecosystem and the ways in which human communities, such as early

Egyptian society, used and disrupted that system, and reciprocally how the human system was altered by the use of the natural system, as the seasonal flood pattern was used to irrigate crops to develop one of the first agrarian civilizations.

Patterns and NGSS. In addition to systems, pattern is one of the Next Generation Science Standards (NGSS), eight cross-cutting concepts which can be applied to many different scientific foundations across all grade levels, in addition to all content areas. For example, patterns can be found in human systems, such as patterns of migration or settlement, as well as within natural phenomena easily accessible to all learners, such as tidal patterns or tree rings. These NGSS crosscutting concepts foster integrated learning experiences whereby patterns can be applied to both natural and human systems (Uitto, 2019).

In a thought experiment to create the next-generation curriculum for libraries, archives, and museum (LAM) programs, educators and librarians took a systems-thinking oriented approach to creating curriculum at a conference in Europe (Latham, 2018). They tied everything to the NGSS science themes because science and data give students a reason to learn how to interpret and understand those natural phenomena. “We are stuck in our own history, structures, and practices...It is difficult to undo what has been shaped by history whether it meets current needs or not...But this past may be paralyzing us, making it difficult to see the bigger picture” (Latham, 2018, p. 100). In this model, the role of the educator is to provide alternate narratives for our students to build their own knowledge (Latham, 2018). In an integrated curriculum, instead of looking at everything in an analytical framework from a linear and parts-driven mentality, we approach learning from a framework based on “‘the assumption of wholeness’ which holds that at some

fundamental level of reality, everything is connected to everything else” (Latham, 2018, p. 101). By using a curriculum design template that helps to orient the educators to wholeness, libraries and museums can provide an example to be used in classrooms (Latham, 2018).

Culturally Responsive Teaching

Another progressive strategy increasingly gaining prominence is Culturally Responsive Teaching (CRT). This theoretical model helps students to accept and affirm their cultural identities while also developing critique of the systems that lead to inequities and oppression in schools and other institutions. It centers asset-based approaches as alternatives to deficit-oriented teaching methods, which position the languages, cultures, and identities of students as barriers to learning. Muñiz speaks to the need for CRT to be widely taught due to the widening demographic gap between white, middle class, monolingual women who predominantly teach in the education field, and their students, who are from a range of racial, ethnic, socio-economic, and gender backgrounds. Since, demographic parity is unlikely to occur in the education field anytime soon, Ladson-Billings (1995) and Muñiz (2019) argue that it is all the more vital that educators adopt CRT. Freire’s concept of *praxis* means to actively practice a theory, and CRT demonstrates praxis in a current educational context by encouraging reflection and action in educational institutions. Within this practice, teachers must consider their own self perception by holding high standards, being reflective practitioners, and believing in a Freirean notion of “teaching as mining” or pulling knowledge out of students that are capable of academic success. Teachers also create and engage communities committed to meaningful learning,

including the cultivation of student-teacher and teacher-student relationships (Freire, 1970).

Culturally responsive teaching is a mindset shift, and requires that teachers recognize collectivism through common themes such as group harmony and interdependence. It also requires teachers to do the social-emotional work with students and families with social, linguistic, racial, and/or economic differences, and to consciously pay attention to un-learning biases (Hammond, 2014). This is transformative pedagogy because it requires that we adapt our learning systems to honor the learning styles that students come to us with, and provide content that they can connect to their lives and fonts of knowledge. CRT requires teachers to understand what “culture” really means, explore their own cultural beliefs and biases, and study how the brain learns. Diverse learners need to feel like they are in partnership with their teachers in a learning community built on trust, with a positive mindset and a language to talk about their learning. Teachers need to learn brain-based information processing strategies familiar to oral cultures like metaphors, rhythmic mnemonics, and “story-ifying” of the content, and to build supportive classroom environments so that students from diverse life backgrounds feel safer taking risks in learning situations.

Holistic Education

Another transformative approach that could be applied to modern learning is holistic education. Increasingly, educators recognize that honoring differences must replace deficit thinking, and that we must value neurodiversity, defined as “the concept that differences in brain functioning within the human population are normal and that brain functioning that is not neurotypical should not be stigmatized” (Merriam-Webster).

Education needs to expand our field to normalize diverse learning styles and modalities in order to avoid promoting only one “cultural style” of learning, or “a single way of teaching and learning...used with a particular group without accounting for an individual’s past experiences...” (Gutiérrez & Rogoff, 2003, p. 20). The traditional model of teaching has embedded cultural stereotypes and terminology that lead people to think of terms such as “best practices,” “low-performing,” and “minority” from a binary, either/or perspective. Instead, educators could assess the humans that walk into the classroom on any given day with the understandings that they bring with them a unique set of experiences while recognizing that these are changeable and will inform the collaborative nature of the classroom over time (Gutiérrez & Rogoff, 2003). The “static or normative understandings of culture” perpetuate the narrow view of students as being either/or, rather than looking at students with an intersectional lens, whereby they bring their multiple identities to the classroom, which are ever changing in a dynamic relationship with the school and extended community. Gutiérrez & Rogoff (2003) propose that “an important feature of focusing on repertoires is encouraging people to develop dexterity in determining which approach from their repertoire is appropriate under which circumstance.” (p. 22) This is “code-switching,” whereby students learn to adapt themselves to multiple cultural and socio-economic spaces using language, posture, and cultural practices. Educators must, by extension, “check their assumptions about an individual’s familiarity with the focal practice as well as seek further information about whether and how an individual might participate in the practice...” instead of placing the individual within a larger pattern based on culture (Gutiérrez & Rogoff, 2003, p. 23).

To Bring Up or To Lead Out. The Latin roots of education are "educare," which means to bring up, rear, and "educere," meaning to bring forth, lead out (Online Etymology Dictionary). The difference between these two root words defines the debates in education today. One definition sees education as a means to pass down and preserve knowledge through rote memorization, and to provide a template for youth to shape themselves into the same workers and model citizens as their parents. The other interpretation sees education as preparation for what is to come, accepting that it is a speculative process, and focusing instead on critical thinking, innovation, and problem solving strategies that may be applied to a variety of heretofore unknown future challenges (Bass et al., 2004).

Social-Emotional Learning

Freire (1970) states that "dialogue" presumes equality among participants. Each person must trust the other; there must be mutual respect and love (care and commitment). Each one must question what they know and realize that, through dialogue, existing thoughts will change and new knowledge will be created. Increasingly transformative pedagogies recognize and center the value of social emotional learning. More recently, Orem (2019) claims that we are beginning the "Third Education Revolution," where technological, data, and human literacies are emphasized, and critical thinking, systems thinking, entrepreneurship, and cultural agility are required. Orem reflects that social-emotional learning will be key to navigating this new landscape and this learning starts in early childhood. "Deep self-knowledge, emotional regulation, responsible decision-making, and empathy and perspective taking will be particularly important," (p. 2). In order to prepare students for true 21st century skills, they need to be self-aware, and

“The role of emotions in learning and identity work cannot be overstated.” (Carlone, et al., 2015, p. 1528).

The power of social emotional learning (SEL) is clearly illustrated in Google’s 2012, study, called Project Aristotle, that sought to understand what makes some teams fail and some succeed. What emerged, when they studied a variety of team formations, was that the teams that succeeded had the greatest psychological safety, defined as “a sense of confidence that the team will not embarrass, reject or punish someone for speaking up” (Duhigg, 2016). Tan & Calabrese (2018) similarly found this culture of emotional safety and sense of belonging was felt by students in the Makerspace, when African American female students in this study were empowered to use tools in context and to create projects that respond to intersecting oppressions, such as by building a “SafePax bag” to summon help when being bullied, and provide them with a place at the table of Makerspaces (p. 54). The collaborative creation of group norms creates a feeling of safety and belonging that allows youth to envision a not yet realized world they wish to inhabit. Tan & Calabrese (2018) concluded that “youth wished to be supported in growing their knowledge and in imagining a world not yet” (Tan and Calabrese, 2018, p. 53).

Recent brain research explains how children’s social, emotional, and academic development are interrelated and that in order for the brain to be ready for learning, it must have its basic needs met—sleep and food—in addition to social relationships, emotional experiences, and cognitive resources (Immordino-Yang, et al., 2018). To meet the neurological needs of young people and optimize learning, teachers need to address the whole child, which includes the historical and current knowledge that each child brings to the classroom or learning environment from family and cultural contexts. “Educating the

whole child...is a necessity for all children. Genuinely pursuing an integrated, whole-child approach to education will require substantial innovation in policies and practices, but children's brain development, and the learning that depends on it, are at stake" (Immordino-Yang, et al., 2018, p. 16).

Teacher Identity

In the development and application of any transformative practice, the action in Freire's praxis, teachers must also be reflective, and engage in opportunities for solidarity and critique with other educators. It is important to focus on teacher personal, physical, and cultural identity as well as how they intersect. Identity is co-constructed by that person and the other people he or she interacts with in a socially organized activity (Greeno, 2002, p. 1). There is a dialectic relationship between the identity of the self and that of the other, and learning about one requires you to learn about the other. By presuming what would be relevant to the lives of our students, we limit their ways of knowing. But, similarly, if we provide irrelevant material, we lose their sense of agency, and limit the ability to call on prior knowledge that can build confidence to undertake the task at hand with rigor.

Inherent in the educational system is the truth that teachers are positional and perpetrators of established systems of power. The dual oppressions of racism and sexism within academia helps highlight the importance of identifying equity practices to counter these oppressions, so that teachers do not inadvertently continue these cultural norms. (Ashlee, et al., 2017). hooks (1994) believes we must break down traditional notions of the teacher as all-knowing and the students as voiceless. Teachers must obtain a real knowledge of self to de-center power and become aware of their positionality in the

oppressive system in order to fully understand the relationship between power, ideology, knowledge, difference, and identity.

Anti-racist teaching has become a familiar term in the wake of the Black Lives Matter Protests after the summer of 2020. Corporations and academic institutions alike send out statements aligning themselves with this movement. However, much of the anti-racist framework is rooted in identity work being done by people at an individual level. An educator must have knowledge of their own self in order to identify how they approach a given situation, how this may be different from a student approach, and to provide cause for the student to both deepen and expand their knowledge base within the classroom, with one informing the other. This connects with social emotional learning by supporting students to take on different positions within the classroom and therefore to push themselves to approach problems from different points of view. The familiar teacher-talk move of “revoicing” changes the positionality of the student from giver of knowledge to one of collaborator, and provides the student with active agency within the classroom. This also changes the role of teacher from “sage on the stage” to facilitator and co-learner, and provides emotional safety to the student for more willing and open participation. This shift could provide greater opportunity for competence, authority, and accountability in curriculum design (Greeno, 2002).

Teacher self-actualization requires the alignment of theory and practice in order to attain one’s full potential. Freire introduced the concept of conscientization, or the process of developing a critical awareness of one’s social reality through reflection and action. Action is the process of changing reality, and learning is a critical process that depends on uncovering real problems and actual needs. Teachers must reflect on their own

positionality and identity in order to understand issues of oppression and liberation. If teachers “share responsibility in responding to and further preventing community atrocities,” then they must know their own role within the intersecting identities as they manifest in the educational system (Beck, 2016 p. 1). Teachers and schools who are able to provide spaces that provide and promote “identify(ing) and disrupt(ing) prejudice” within self and school community can then incorporate these un-learnings into the development of inquiry-based curriculum (Beck, 2016). Freire believes that praxis cannot be obtained solely through dialogue to gain knowledge of social reality, but that teachers and students must act together with the environment to reflect critically upon and transform their perceptions through more action and critical reflection.

Third Spaces

As we work to transform the school and classroom, it is necessary to provide an alternative to the student/teacher, oppressor/oppressed, and right/wrong duality often presented in education, so that teachers and students can try out new ways of being, new ways of interacting with one another, and new identities in a safe and supportive space. To do this we should apply the concept of third space, a socio-cultural term used to designate communal space, as a distinct place outside of the home (first space) or workplace/school (second space), which provides a learning space outside of the traditional binary locations where an individual can experience a transformative sense of self, identity, and relation to others. The creation of this thirdspace could provide greater intentional space for sociocritical literacy to occur. Gutiérrez (2002) defines this literacy as, “a historicizing literacy that privileges and is contingent upon students’ sociohistorical lives, both proximally and distally,” (p. 149). This work is deeply socio-emotional, where participants

look at their own traumas and dominant histories, and then transform them into strengths. Used as a disrupting tool to provide a wished-for future co-constructed by teacher and student, this can help to orient students toward possibility in the safety of a shared third space co-created by teacher and student (Gutiérrez, 2008). Gutiérrez (2008) uses the metaphor of “social dreaming”, a concept coined by Freire, within her creation of third spaces to “help students redefine ‘the world as it could be’” (Gutiérrez, p. 158). Similarly, hooks (1994) believes an engaged pedagogy that involves student voice and experience is transformative, and we need new theories to reflect upon our current dilemmas and use to transform into a wished-for future. We need new codes, new indoctrinations, and new tools to build this “collective reality” (Gutiérrez, 2008, p. 154).

One important practice can assist with the exploration of the grey area outside of the binary, and that is identity boundary work. Identity boundary work challenges an individual's existing perceptions of one's identity and provides opportunity to develop outside one's own comfort zone to create new understandings of one's abilities, interests, hopes and desire (Carlone et al., 2015). Through working with youth in a summer field work program Carlone et al. (2015) identified four tools that enabled youth to move beyond their preexisting understandings of their identity and to forge new perceptions of themselves and their capabilities. These tools included:

- (1) Boundary objects (tools intentionally used to facilitate youths' engagement with animals and nature and help them work through fear or discomfort. Examples of boundary objects include waders/rubber boots so youth had more access to animals in the water, and traps so that they could observe the animals in a more contained way)

(2) Sufficient time and space (to enable interaction with and adaptation to new environments, organisms, and scientific field techniques that allow students to experience a new awareness of their own abilities)

(3) Social support and collective agency (to create necessary group support in challenging circumstances)

(4) Scientific and anecdotal knowledge and skills (to provide content specific vocabulary, such as how to use binoculars or another scientific tool)

The work of Carlone et al. (2015), illustrate the way that fear, in small doses and handled with empathy, may become a resource for youths' connections to animals, nature, and science. They state that, "youths' situated identity boundary work in the program may have the potential to spark more sustained identity work, given additional experiences and support" (Carlone, et al., 2015, p. 1526). It is possible to help create both cause and support for students to move into their growing edge, while also valuing what prior experience they bring to the encounter.

An anti-discriminatory approach combined with identity boundary work could do a great deal for our student communities. It could: "move the identity of queer students of color, and other intersectional identities, to a 'location' that empowers 'telling'" by creation of a third space, thereby honoring the storytelling model of ethnographic research (Beck, 2016). To remove the teacher from the center and allow space for students to create third spaces as a way to honor cultural backgrounds and student strengths, the teacher must provide reason and context for students to bring in their prior knowledge and use it to integrate with something new. Bringing in real world activities to the classroom helps students make more connections to their own lives (Flessner, 2009). hooks (1994) argues

that reflective and self-actualized teachers are better able to dialogue without reinforcing control structure. However, creating a "safe space" has to be truly democratic so as not to merely reproduce teacher centric thought:

The academy is not paradise. But learning is a place where paradise can be created. The classroom, with all its limitations, remains a location of possibility. In that field of possibility we have the opportunity to labor for freedom, to demand of ourselves and our comrades an openness of mind and heart that allows us to face reality even as we collectively imagine ways to move beyond boundaries, to transgress. This is education as the practice of freedom (hooks, 1994, p. 12).

Herein lies the challenge of teachers, because this is hard and constant work to un-do the learned world, and consciously and steadily work to co-create a new one within the established system of education. One way to begin the unlearning is to build a third space, where new norms and practices can be tried and agreed upon. Another way to start this is to acknowledge the existence of passive oppression and privilege and its impact on our educational system. As Johnson (2009) notes, "Privilege is always at someone else's expense and always exacts a cost. Everything that's done to receive or maintain it—however passive and unconscious—results in suffering and deprivation for someone". Johnson speaks of passive oppression as a form of racism and privilege, and defines it as "making it possible for oppression to happen simply by doing nothing to stop it" (p. 7).

Conclusion

Though there are many reasons to move in a direction of greater ecological, personal, and cultural literacy and understanding, the current curriculum and pedagogy continues to primarily support the standards-driven banking model of education. However,

we are seeing in real time the significant disservice these approaches have on children and our environment as a whole. There have been many contributions to the field of education made by previous educational scholars that support a transformative approach. For one, the theoretical frameworks of Friere, Orr, hooks, and others continue to have relevance in the present day and still inform educational theorists. Many of these theorists have investigated the hard questions of education and proposed potential solutions to make it better. The existing research helps show what has come before and informs those of us still struggling with defining what should come next in taking education into the twenty-first century. One ongoing debate is how to navigate away from the rigors of standardized curriculum and mandated testing when so many people know it is not good teaching.

However, a significant gap in the academic literature is the lack of research exploring how educators' understanding of their own intersectional identities and relationships with space impact curriculum design. The purpose of my research is to understand how elements of teacher identity affect the process of curriculum design and daily pedagogical decisions that occur in the classroom. I hope to use this to then to understand how various stakeholders designing an environmental education curriculum understand self and place.

Chapter 3: Methods

Much has been written about teacher identity, and how it manifests in the classroom (Greeno 2002, Beck 2016), but there is little research about the intersectionality of identities; particularly the ways in which social, cultural, and environmental identities overlap to inform and influence the everyday decisions that teachers make in their classrooms. Teachers lead by example in every facet of their word and deed, and the implied values of teachers are the hidden curriculum. Therefore, more study is needed in order to understand how multiple identities may lead to decision making in curriculum design.

The methods that are explained below were designed to address this lacking component by considering ways in which teacher experience informs curriculum design. In this study, the direct experience of teachers was the primary source of data on the subject of identity development.

Research Questions

The primary research question for this study was: How do elements of teacher identity affect the process of curriculum design? This study focused on teacher responses to a series of questions. To this end, the interview questions were formed based on the following essential questions:

- How do various stakeholders designing an environmental education curriculum understand the intersectionality of self and place?
- In what ways are teachers aware of how their core beliefs and identity interact with teaching?

These central questions were used to focus the study around the elements of teacher identity, the influence of these identities upon curricular design, and the impact of multiple teacher identities overlapping to create place-based environmental education curriculum in a K-8 setting.

Description and Rationale for Research Approach

Two worldviews are represented in my research: constructivist and transformative. The constructivist worldview is based on understanding, social and historical construction, theory generation, and making meaning from multiple viewpoints. (Creswell & Creswell, 2018). This study supports a constructivist view because I am seeking an understanding of teacher perspective. To do this I rely on participants' views and include the use of open-ended, teacher-generated responses (Creswell & Creswell, 2018). It is rooted in the belief that knowledge is constructed through experiences and teacher experience shapes their knowledge and application. The social and cultural backgrounds of teachers shape their identity and are what I wished to understand through this research. In addition, researcher positionality was considered in the analysis of this data, as my own history and culture influenced how I analyzed the interviews. I looked for patterns in the meaning teachers have about the shaping of their professional identity.

The transformative worldview places its focus on diverse groups of people who have traditionally been oppressed and seeks to identify political actions that can be taken to transform these systems of oppression (Creswell & Creswell, 2018). This research focused on the social issue of oppression, and sought to identify positional shifts that could alter the dualistic nature of an oppressor/oppressed. These shifts could lead to greater liberation from structured curricula made by parties removed from immediate learning

environments. I was interested in moving from a perspective of “damaged centered research” to one of “desire based solutions” (Tuck, 2009) in order to envision the post-structuralist future of environmental education. This research also sought to understand how teacher positionality can influence the development and application of curriculum. It contains an action agenda for pedagogical reforms that may change the lives of teachers and students and promote greater environmental and cultural sustainability. My aim is to inform the shaping of curriculum and strategies given the heightened awareness of systemic racism and climate change as significant problems to be solved. The intention of this research was to identify greater opportunities for action and reflection in both teacher professional development, and also how personal history and identity unfolds in the classroom setting.

Qualitative research provided me with the opportunity to discover multiple stories and seek to find themes between them. Seidman (2019) explains, “I interview because I am interested in other people’s stories.” (p 7). To this end, I used a qualitative approach whereby I interviewed teachers and educators using open ended questions, to provide subjects with the opportunity to share broadly, making their own meaning through the process of explanation and reviewed these to see what patterns emerged.

We are all made up of a collection of lived experiences that can be assigned themes. According to Seidman (2019), “Individual's consciousness gives access to the most complicated social and educational issues, because social and educational issues are abstractions based on the concrete experience of people,” (p 7). Just as we need to shift our pedagogies to be more student centered, taking student prior knowledge, place, and culture into account, we also need to help teachers reflect upon their own identities in order to

help them make decisions from an engaged place. By engaging in Seidmans' (2019) structure of phenomenological interviews that combine both overarching life interviews and deep dives into "reconstructing his or her experience with the topic under study," (p 15), I hoped to get as close as possible to teachers' lived experiences. By providing space to reflect upon their identity formation and, as Seidman (2019) says "reconstruct the constitutive elements of lived experiences" to identify a phenomena that could provide insight into their future practice.

One practice I learned and saw as valuable to my research was that of the dialogic spiral. Kinloch & San Pedro (2014) define this as "the construction of a conversation between two or more people whereby the dialogic process of listening and speaking co-creates an area of trust between the speakers—the space between". Throughout my life, my own learning, both of myself and of the greater world, has been advanced through building on prior knowledge. I recognized that this same practice could be applied to the three interview structures I was undertaking. By engaging in a dialogue, and providing receptive and reflective listening, my participants co-constructed knowledge with me and we found a space between interviewer and interviewee, outside of the binary, akin to the Thirdspace I was also interested in understanding. Storytelling is an iterative process, and we are all in a constant state of telling and re-telling our story, based upon the new settings, characters, and plot points we encounter. By asking the questions that I did in the way that I did, I provided cause for my participants to put together new ways of telling their stories, which provided them with insight in their own identity formation.

Research Design

Research Sites and Entry into the Field

Teachers at Mountain Elementary, as well as educators from local educational agencies, were recruited for participation in the study (all proper names in this study have been changed to pseudonyms to protect participants' identity). Mountain Elementary was purposefully selected because the researcher has been a teacher there, and is the site lead for a collaborative grant through National Oceanic and Atmospheric Administration (NOAA) working with the Marin County Office of Education and teachers in Sonoma and Marin to develop environmental education curriculum that embeds issues of equity and inquiry-based teaching strategies. The California Department of Education describes the demographics of Mountain Elementary as, “a single-school district with an unusual demographic profile; it serves a community with many multi-million dollar homes yet nearly half of its students qualify for the free or reduced lunch. Its community-funded status provides ample resources enabling small class sizes, an outstanding nutrition program, experiential activities, a free preschool, and phenomenal enrichment programs. The school shows excellent results in preparing students for high school and beyond.” (California Department of Education, 2017).

Participants and Sampling Procedure

In addition to teachers from Mountain Elementary, other educators were recruited based upon the work we had done together on the NOAA grant. Participants were invited to participate in order to gain perspectives from other members of the educational field who are currently working outside of the classroom. Qualitative data was collected through

a series of three interviews, which each lasted between 30 and 60 minutes, with five educators over a period of two months.

In order to recruit participants, I sent an email to the teachers on my staff and asked who would be willing to be interviewed for my project. I sent an email to professional colleagues currently working on the grant, including the director of a local science museum, the director of curriculum at the county office, and a professor at UC Berkeley, to ask if they were willing to be interviewed or had other suggestions for who I could interview. All agreed to be interviewed. The purpose of recruiting teachers and educators was to explore how their understandings of self and place affect their educational philosophies for integrated teaching and corresponding curricular decisions.

Table 1 Demographics of study participants

Educators	# of years teaching	Age	Gender	Race
Kate	30	60	F	white
Jessica	10	30	F	white
Sara	15	40	F	white
Hazel	20	50	F	white
Galit	15	50	F	white

Methods

I used interview questions for data collection, and hoped to more deeply understand the causes of identity formation, and what significance it has on teacher positionality as they approach curricular decisions. I interviewed each participant three times over the course of my research, and recorded these interviews on Zoom. I followed Seidman's model of three interviews, where the first focused on life history, the second explored the details

of lived experience, and the third was designed to provide opportunity for reflection. I spaced each interview a week apart, and did my interviews over a period of nine weeks, providing myself time in between to transcribe and analyze my notes before conducting the next interview. Through these interviews, I hoped to collect enough information to find patterns that might illuminate the development of teacher identity. One question I asked was what they considered their identity to be. Through their answers, I was able to construct some of the formative identity markers —socioeconomic status, early education, etc—that led me to ask follow-up questions pertaining to the application of these identities (Appendix A - Interview Questions).

Data Analysis

I recorded each interview on my laptop, and wrote an analytic memo at the conclusion of each interview to record the gist of my impressions, and basic information about subject, location, time and date. I then used Otter AI to create a transcription, and then began coding the transcription. In the initial coding, I remained open to new insights and attempted to develop categories based upon what I saw. After I completed initial coding, I went back with a more focused coding approach and read specifically for the categories that specifically connected to certain identity formations. I entered my interviews looking for words such as “identity, race, class, gender, religion, ability, status, value, pride, hope, family, region.” In addition, I also found words such as “systems, learning, inquiry, research, motivation.” I took each interview and put it into the web program WordCloud Generator in order to see a visual representation of word frequency to help identify any patterns I had missed.

Once I found these codes in the individual interviews, I looked to find the similarities and differences between the coded lists for each interview and began the process of concept mapping. To do this, I began with the codes that came up the most frequently, and then began to connect them to sub-codes, noticing the codes that most commonly connected to each other to determine any correlations.

I then used these words, themes, and sub-themes to create a list in my notebook to collect and compare data. After I collected all of my data, I looked for patterns to show different routes to same or disparate identities. Finally I looked back at my analytic memos to see if there were any general themes or patterns from my initial reflections.

Validity

Two main threats to validity, according to Maxwell (2012), are researcher bias and reactivity, which involves the relationship between the researcher and the interviewee. Though it is impossible to remove researcher bias, it can be mitigated by a process of self-discovery and awareness of the conscious and unconscious bias we all carry within us. It is impossible to remove the inherent power differential associated with reactivity between any two given people, but the awareness of such a differential can provide insight to apply to the results. In addition, the relationship between researcher and interviewee can actually be viewed in the positive, as both engage in the dialogic process to more deeply understand a series of questions. It is most important to understand how you influence your subject, rather than to think you have no influence upon them at all.

I was aware of my bias throughout the research process. I believe that this year in COVID showed clearly the inequities present in the educational system. I believe that standards and testing have dominated the conversations around education because they

are things that can be measured and defined as success. I believe that one of my main priorities is to inspire joy and curiosity in my students, and there is no test for this, or rubric to which to compare. I believe that existing curriculums do not take student or teacher interest into account, and, as a result, much of the joy is taken from the learning process. I believe learning is a process, and that the things you are learning are merely the reason to learn how to learn. I believe that the scope of environmental education is limited, and that it does not adequately address the intersectionality of the global, the regional, and the local, to the self, the community, and the other. I believe student voice is sorely underrepresented in most schools, which is intentional in some cases due to lack of willingness on the part of the adults to engage in their own critical analysis of long held practices and beliefs. I believe the purpose of education is to make connections between experiences, and from these connections to build an understanding of the interconnected cultural, environmental and emotional systems we exist within, as well as to find what brings you joy and how you can contribute to the greater good. I acknowledge that I have doubts about the sustainability of the current educational system, and it's under-serving of marginalized groups, due to my father being a special education teacher and discussing these inequities for many years, and this bias is also based on my own experience as a classroom teacher. I also have had the privilege of an exceptional liberal arts education, at private schools both on the East and West coasts. This education is both the result of the identities I embody, as well as the means by which I may critique them.

In order to address my reactivity, I had to acknowledge that I am a senior teacher at my school site, and the union president, both positions that may have influenced my participants to say what they think I want them to say. However, I had not spoken to either

participant from my school site, my colleagues, about the nature of my research in any depth. My influence over the educators at the three other institutions was that they were aware of my role as a graduate student, and had all worked with me over the course of the development of a week-long summer institute.

I used three strategies to deal with validity threats. The first was rich data collection because I conducted multiple interviews over time, so as to “provide a full and revealing picture of what is going on” (Maxwell, 2013, p. 126), and these interviews were full transcripts of the interviews, not merely my subjective notes based upon what resonated with me. The second strategy I implemented was respondent validation because I shared my notes and findings with my subjects periodically in order to gauge their accuracy, check my understanding, and see what direction I or they might suggest for our next interview. Finally, to achieve triangulation, I found a variety of professionals and educators to interview: two teachers at my site, an education director at a local museum, a researcher at a state university, and an employee at the county office, which would help provide angles for comparison between my data.

Chapter 4: Findings

The primary focus of this research was to understand the formation of individual and place-based identities of educational stakeholders on curriculum development and classroom instruction. In order to have meaningful dialogue about a topic, it is helpful to clarify the definitions being used. Often, the discussions about definitions provide synthesis of the material under study based upon consensus and group agreement, and can be the most interesting element of the conversation. So, before I asked my participants to define their identity and relationship to place, I asked them to define both of the terms “identity” and “place.”

One research participant is a director at a major local educational organization. She is a mother who began her career in the science and tech world overseas, and came later in life to teaching, and provided this definition of identity:

Identity, not as an object, but as a verb identifying a process... we are trying to make sense of ourselves... so this is why it's always changing: the context is always changing, we're moving... authoring the self... there are all these narratives that float that we take in ourselves and we decide which of them we take with us, and how we weave them together to make meaning of who we are in the world.

There are both fixed and changeable elements to a person's identity. The central question for my research examined how both of these elements are formed, in order to understand why teachers choose what they teach and how they teach. The process of identity formation involves reflective practice and action, and then both again, mirroring Friere's (1970) approach. Thus, understanding identity formation is an important piece of educational reform.

Definitions of place amongst the research participants were more varied, and the relationship between identity and place was not always clearly articulated. One participant defined place as, “a spot on the globe.” In contrast, another participant provided a much more nuanced conceptualization of place, explaining that, “what interests me about a place is to see the interaction of the landforms and the lifeforms and the human culture in places, that fascinates me.” Place was also viewed as one’s place in a group, as in how they identified their place in the educational system, or what their role was with other educators. Most participants ultimately identified their place as where they live and work on a daily basis, but also reflected upon how their connection to place had changed as the context of their life changed. Place holds both a geographic and relational meaning, and these meanings influence how an educator views themselves in the context of their classroom and school system.

With the understanding that both “identity” and “place” hold different meanings for different participants, in what follows below I provide a theory of how a teachers’ understandings of identity and place affect classroom curriculum and pedagogy on a daily basis. First, I explore how educators incorporate their own identities into both the content and the pedagogy chosen to deliver this content. Teacher identity influences curriculum design because the reflective process of self discovery provides opportunities for educators to understand their own identities, and their formation, and to adjust their own choices to perpetuate or disrupt the circumstances which formed those identities. Key formative events often provided motivation for teachers to shift their approaches to pedagogy, such as confronting sexism in their own lives.

Second, I examine how participant identities are shaped by the place or places that they are raised in, which establish lasting identities and beliefs that influence curriculum decisions later in life. An educator's relationship to place can be a significant factor in curriculum design because a teacher's understanding and connection to a place has a direct influence on how they approach topics about place in the classroom. Educator relationship to place is defined by an understanding of their position in the natural systems around them, and a care for the physical space they are in. Without this care, educators seem less likely to promote place-based learning. Participants who spent time in the natural world as children are often more comfortable using it as an extension of their classroom, and can provide motivation for children less comfortable outside. At the same time, a love of the natural world can be cultivated later in life.

Finally, I discuss how human systems in education became significant in the COVID era, and provided an opportunity for educators to deeply reflect on their own identity as a teacher as they worked outside of the traditional school system. By removing education from a physical place, and the teacher from a physical proximity to students and other staff, long held practices in education had to be re-examined, and new ones quickly substituted to adapt to these new definitions of both physical and relational place. Teaching "out of place" required curriculum and pedagogies to be flexible and iterative, and provided a clear opportunity to see what did or did not work. I then include examples of how working within these human systems can lead to sustainable transformative curriculum and pedagogy.

I Am a Person of the World

Educator identity emerges from formative life experiences as well as key turning points, and is an iterative process. One of my subjects, Hazel, said, “self-identity...is so malleable...it also changes as we age, too. It’s just fascinating when you think of teaching, because you’re always thinking of the child development, but human development continues on...” This process includes formative life experiences that are typically defined by gender, class, and racial identity, and for my participants, their position within American society (or the U.S.) defined their formative educational experiences as well as their access to higher education. My five subjects were all white, female educators with post baccalaureate degrees from middle class backgrounds. Four of them are from the United States, and one was from Israel. This places them all in the predominant demographic for educators in the United States: data from 2017 shows that public school teachers are 79% white, 76% women, and that 58% hold a post baccalaureate degree. In addition, educational administration also has a white, female majority—78% white and 54% women—and can be presumed to have a majority of professionals with a post baccalaureate degree (NCES, 2021).

The high percentage of these specific intersecting identities within the field of education could be traced to the limited career choices for women historically, given that both teaching and nursing, another female heavy field, were two of the few options open to women when they were able to enter the workforce. One of my subjects, Kate, said “[my mom] always wanted to be a nurse, but her mom wouldn’t let her...really sad.” These fields both required some education, but also allowed women to care for children by working school hours, or on a more flexible schedule such as nights or weekends. Though much has

been said about the need for greater diversity within the teaching profession, it remains dominated by white, middle class, well-educated, cisgender women. In addition to confronting these formative identities, participants also had key turning points in their lives, such as motherhood and mentorship, that provided identity shifts.

Sexism

Sadly, sexism continues to provide significant identity forming experiences for most white women. Based on their personal encounters with sexism, my participants strived to change education to make it less sexist and more egalitarian, by moving away from a hierarchical, top down, male ego centric model, and into a more collaborative, cooperative, systems model that values multiple perspectives.

For one participant, before becoming a teacher, a chance encounter at her son's track practice with a group of eighth grade girls who were struggling with their percent homework hooked her into starting her teaching career. Her own experience of discrimination and struggle to compete with the boys in math class and the men in the finance world, where she first worked, drove her to help them and make math relevant. "It's how you make commissions and you need to know what 3% means!" She explained that when she entered the financial world she was breaking a glass ceiling, and had to forge new pathways for women in a male dominated field. Below, she tells a story about some of the harassment she encountered:

I was pretty much the only woman... I made this whole presentation about asset based lending and lease vs purchasing and then... the guy... comes up and said 'Oh... where'd you get her?' And he goes 'Yeah, cute and smart, huh?' Like that was their whole thing... there [was] weird stuff where somebody would put their hand on

your leg and say if you want to close this deal, you have to give a little more. You know what I mean?... People that I never thought [were] anything but the best family man... they're sleeping with people and doing stuff... and you have to ignore it... And it's hard... I would talk to other women... we were always so insecure... "Are we good enough?" Whatever. And the men... I don't think they ever questioned themselves like we did... they just assumed they were great.

Though it was a challenging world to break into, and she encountered blatant sexism and harassment, she learned coping strategies, and later used the skills and confidence she learned to develop project-based mathematics instruction for her students.

Another participant shared how she felt isolated and unaware of the gender imbalance in the science world:

While I love science and I appreciate where it took me, I felt that I don't want to be part of that specific world. A world where I was almost always one of maybe one or two other women... most of the companies I worked with I looked for people to work in my group, I never found women... it took a long time in my life until I realized it, I didn't have this consciousness about gender.

But when she changed from high tech to education, she noticed:

The energy is different, it's not a competitive struggle of a woman in a business world of men, that it's all about making money and competition and you have goals. It's more relaxing energy with people who want to collaborate and have goals that are not about them all the time."

Her desire to be in a less ego driven field led her to change to education, and she focuses on collaborative problem solving and group design theory in her teaching practices.

Another participant's father was very encouraging of his daughters to get an education:

He had four girls and one boy. And my sister was like, 'Well, I don't need to have an education'. He's like, 'Yes, you do.' He said, 'You never know, your husband could turn into an alcoholic, or he could die...you never depend on anybody else. You always make sure you can take care of yourself...and then if you do have a husband to take care of you, great...But you know how boring it is to go to a cocktail party and the wife has nothing to say for herself.'

As a white female from a middle class upbringing she was expected to get an education in order to be independent. She models the generational shift from her own mother's experience of being a stay at home mom to having a high powered career in finance, and then moving into education. In addition, she expects high achievement from all students regardless of gender, and consistently implements practices to equitably support this achievement.

Finally, one participant shared how she came from a family where women's voices were valued, and was shocked when she went out into the world and saw that that was not always the case elsewhere. As a result, her identity as a female scientist in a position of not feeling heard has encouraged her to:

take on those teaching practices of student discourse and making sure that students do feel like they have the airtime to express themselves, what they know, what they don't know, how they're feeling, what they're thinking... I see a lot of female scientists shut down in various ways and don't get to have that time and that platform and those honest, open discussions. I remember feeling that very distinctly,

as a young graduate student feeling like, 'I don't want to show what I'm thinking or what I don't know, because that's really scary.'

The experience of not feeling heard and being shut down provided the motivation to actually work towards creating teaching practices that strive towards creating a more equitable discussion space, and to shift the role of women in science.

Though sexism continues to be an issue in education, and in our society as a whole, with equal expectations for all genders, shifts in teaching practices, and a collaborative inclusive approach, perhaps some improvements will be made.

Motherhood

Another formative identity for the research participants included motherhood, as all of my subjects were either already mothers, or considering becoming mothers. Teaching is a profession where lived experience as a parent regularly informs decisions within the classroom, and expertise with real-time child development can be applied directly to the job. It is also common to be called upon as a de facto mentor to parents when they need guidance from someone with experience. One participant chose to pursue her masters so that she could take out loans and stay at home with her young son: "I honestly did it so I could stay at home with my son, and I took on a lot of debt doing that... when he's young I can just go get all these loans, live on them...and then I moved... because they said they would pay for [additional certification]." Like this participant, many women are drawn to education in order to be on the same schedule as their children, and to be able to care for them.

Other women entered teaching because their previous careers didn't allow them to be as present as they would like to be for their children. One participant said:

I missed my kids because to close these deals I traveled... stuff happened and I didn't feel good about it... I was making good money but was I a good mother... I'm constantly wondering, as a mother and struggling with being a parent and working full time... I watch my kids now and their struggles and I'm constantly thinking about my identity as a mom... did I make the right choices?

Becoming a mother is a significant shift in identity and brings with it ample opportunity for self-reflection. This greater self-awareness can lead to changes in lifestyle and beliefs. Priorities shift and reorient as the responsibilities become clear.

Based on their experiences with motherhood, some teachers decided to abolish homework after having to help their own children with it, and recognizing the ways in which it did not serve their child, or their family. For others, becoming a mother changed their identity and made them reorient towards education so as to be more present in their children's lives, or to be able to stay home with them.

Prior Career or Life Experiences

Through lived experience, teachers gain knowledge about themselves as well as on subjects they can later draw from in their classroom. Not only do they have real world applications for curriculum, but they may also carry with them the passion that can inspire others to pursue that field, or have that experience. All of my subjects had a career outside of education prior to becoming an educator.

One subject, Kate, entered the world of high finance right out of college. "My first identity in the business world was really identifying myself as a financial person and capable of competing with all the men that were in that industry because it was a very heavily loaded men's industry." This earlier identity provided real life examples for the

curriculum she would later use. When she became a teacher, she worked with her students to show them all, boys and girls, how being a good math student could bring you good commissions, and financial security. Instead of using math problems from the textbook, she would pull the real estate section and talk about sales commissions to practice the real life application of percentages:

But it was exciting. It was a lot of math. It was... cutting these deals... juggle all these numbers... balance everything out. It was very fun. And I think it was that sense of fun and passion that allowed me to be a good math teacher because... I brought in all the deals and we read the newspaper and brokerage... I brought in all real life math applications... All kids, especially the girls, see how you don't have to be good at math to become a mathematician... I understood that if kids deeply understood the applications of mathematics, that they would want to learn it and want to get it correct... we did a ton of project-based mathematics. And I never would have done anything like that if I hadn't come from the business world.

Another subject was an environmental activist before becoming a teacher, but realized she didn't want to be fighting and sitting in trees for the rest of her life: "So I teach the children, you love what you understand. And you give them again this really deep connection to place and the nature around them, they want to protect that." Her activist background shifted from direct action to building the foundation, and is central to all of her lessons today. For example, she started her teaching career as an environmental educator, but soon realized that she wanted to be able to work with students to develop their connection to a place over a longer period than they would have at a nature camp. Now, her curriculum regularly includes a walking field trip to the local shoreline, where she uses the

environment as an anchor phenomena for the week's lesson, such as identifying a dead bird found in the pathway, in order to deeply connect her students to the place over time.

A third participant sees that she, “was always an educator just in different settings.” She drew attention to her previous career and training and the adaptive skill sets:

My background is mechanical engineering and chemistry and then I’ve done most of my working life in startups. And my main job was managing the research and development, on taking things from the idea to the product and I always had a group of... engineers, scientists, programmers that worked under my supervision... I really enjoyed making everyone a group.

After 15 years she left the high tech world and went to teach science because she liked working with and mentoring people. Now she facilitates groups of teachers who develop ideas into experiences and programs. Together, the group assesses the need of the teachers or programs, and works to build the projects to provide the learning opportunities for students in various educational settings. Her background in engineering shows up daily as she envisions and iterates new design challenges for a wide range of students.

Mentorship

Mentors can dramatically alter the course of identity formation through inspiration and guidance. Through the modeling of alternate beliefs, values, or interests, people can discover parts of themselves they never knew were there. The role of a teacher is to provide experiences, and different viewpoints, so that students may see, even for a brief time, life from a different perspective. One participant, Hazel, said:

I had this teacher in fourth grade who remains my ideal of teaching, Ms. Dowling... she did this whole unit... made the class look like an airplane pretending we’re flying

over... and then we did this whole two week immersion like we were in Hawaii... in retrospect, I don't know how it would stand today to standards, but it... just lit something.

This formative experience led Hazel to make choices about curriculum that include projects, such as a backyard nature journal that places students in the role of naturalist of their own domain. She strives to inspire her students, whether it be through connecting them to nature, or using art to deepen their understanding. Hazel also drew attention to the mentorship she received from her grandmother and the impact that had on her approach to teaching:

My paternal grandmother... I just love that woman. I remember floating in the ocean with her, I remember her teaching me bird songs. She had this great Audubon mic recorder that you put these things in to hear bird songs... she had a great collection of rocks and minerals... she was very encouraging to me.

This, along with other early childhood experiences in nature, led Hazel to share many of the same activities with her students, such as laying on their backs to draw the clouds, and coming up with stories for them. "Bringing it back to that direct experience of being outside in a particular place and observing." Her own formative experiences observing and exploring nature instilled a deep love of place in her, and she brings this into her teaching.

Reflective Practice and Emotional Awareness

A final piece of identity formation lies in continuous reflective practice and emotional awareness. Through self-reflection, teachers, and all humans, develop greater knowledge of their own identities, behaviors, and beliefs. They then either choose to promote or refute these identities, behaviors, and beliefs in their classrooms through

choices in literature, word problems, discussion formats, or classroom management styles. One teacher has a morning ritual that she said starts the night before with good sleep hygiene. In the morning she then practices yoga, meditation and gratitude. This practice grounds her and gives her peace. She shared how this helps her strive to provide a sense of peace and calm for her students as well. She works to develop parallel rhythms in the classroom with quiet work upon arrival, a whole group poem, and then a morning meeting that goes into a morning lesson. She often has periods of deep reflection that influence her curricular decisions:

I relate to teacher as activist... we could be the changers and promoters of societies... guiding children and who they are going to become from what they are taught... to have that discretion... to examine what is being taught, what messages are coming through textbooks, rather than just 'this is what we are given, this is what we need to teach from this,' but to have the reflective capacity and to realize, what is the quality of this food you're feeding? And what is the ability for teachers to stand up for different children and families and their community that are underserved and how do you create this almost democratic feeling?... As an activist, you're reflecting on yourself, and where are my blind spots and what I'm presenting. And to create an environment where children can have dialogue, if they have opposing views.

This participant takes her own human system into account, recognizing the connection between what she puts into her body and mind, and what she puts into the body and mind of her students.

Another participant recognizes the value of self care and how important that is to be able to continue to give in this profession, “I learned the hard way that in order to have a good identity of self you have to figure out what your needs are as well... if I fulfill myself... that I can be a better giver.” Self-awareness is key to recognizing how we present ourselves to our students, and teachers who do not practice regular self-care often get burnt out.

Another participant recognized that her own favorite way of learning is through play, so wants to provide the same for her students. “When things are playful I lose myself and I feel best. So I wanted to have this experience for my students...this was the only thing that guided me.” Her own awareness of how she learns best can translate to decisions she makes about providing learning experiences for her students that are more student centered and less curriculum driven.

For each of these teachers, a reflective practice helped them identify what worked best for them so that they could consistently show up as a positive influence on their students. Through this, they are also modeling expected social behaviors that schools tend to promote.

Centrality of Place in Identity Formation

Educator relationship to place is defined by an understanding of the natural systems, and their place in them. One key finding is that where and how a teacher grew up contributes to their identity as a “nature person” or not, and this informs how they approach teaching and learning with and in the outdoors. A second finding is that developing a relationship with the natural place strengthens the relationship with the community, as the place provides a common human experience by which to connect with

others. Thirdly, the role of place as a teaching tool is significant in and of itself, both a physical location as well as learning through one's sensory experiences of a place.

"I Just Want to Eat the Place"

Context matters in identity formation, and where and how a teacher grew up influences who they became and what they center in their teaching philosophy. One participant grew up traveling to national parks with her family and was often outside. The natural world was modeled as both valuable and worth studying from an early age. Key memories involve a trip to the museum and to watch whales. Both places formed strong memories for her, as they stimulated her to ask lots of questions. It was, "really foundational to just see these things, to know that they are out there." She went on to choose a college based on its proximity to water, and her ability to do research as an undergraduate: "I was able to pretty much walk out my front door and go collect data, I'd be out there with my boots and my bucket, and just go study the intertidal animals." She also had many places that, "have defined why I do what I do... I want to protect places... that gets wrapped up into my sense of place and why places matter to me on a more personal scale." The focus of her work now is inquiry based science, as she believes that is the best way to support learning:

One of the most obvious times in my teaching career that... was... influenced by... where I grew up, how I grew up, the things that I value, was when I was running the [government sponsored] K-12 program... really making sure that students were doing projects that connected them to their immediate local environments, and making those types of decisions about... where we were going to take them to start exploring and asking questions.

Another participant grew up in Israel and spent a great deal of her childhood outside which provided a foundation for her to feel comfortable learning about the natural world and allowed her to make connections to it throughout her lifetime: "I know how to walk in nature because... I experienced the skills. I am not afraid to walk in the river... maybe back then I wasn't interested in it, but... it gave me access when I'm interested to do it." Education in Israel included multiple field trips as well as a youth movement that encourages being outside and appreciating the outdoors. She summarized the experience by saying that, "the whole existence was always outside." She also make connections to the history and culture as significant to her way of seeing the world:

Everywhere you go, you can find remains... So... it's fun to pick up stuff and think... is this a part that... someone used, hundreds of thousands of years ago... we all study, many hours a week, the Bible, but not from a religious standpoint, from secular... there's a book that connects us to the place... then you are walking into places that you read about... I don't have this connection that is religious, that you must have the land and you fight for it. But it's... a different connection to nature and history through that.

In this way, she saw her environment as a historical setting for her own human identity, whether through the remains of artifacts she then studied, or through the stories that referenced familiar geography.

Place is also central to identity formation as shown by one participant who discussed how her emotional connection to a place led her to pursue biology, and to then teach what she loved:

Learning science content should be for a purpose... we'll get... students thinking about the places they care about, and why they care about those places. What is the emotional connection that they feel, whether it's just the creek down the street... wanting to provide those opportunities for students to connect, because I know that not everyone has that opportunity, given how they're raised or where they grew up. But finding that bit of nature, in their place, that gives them that sense of connection.

This educator understood that providing the opportunity to connect with the natural world provides an emotional drive to care about a place and provide cause to learn about it. As with teachers, identifying a feeling about a place makes that place important to a student, worth studying, and, ultimately, hopefully, protecting.

One participant took her connection to a deeper level in terms of eating locally. She gets much of her food from the local farms, drinks water from the local spring, and buys her fish from the local fisherman:

I just want to eat the place. Like you're taking it in on this mineral level. So you're part of the place... kind of imbibing the place. I think that really helps fortify our physical nature. I think the connection to place help us feel comfortable and happy... from the star realm down to whatever you're eating... I think we are meant as humans to have this connection to place... if you're a person who is moving from place to place, it's like you are constantly having that relationship with where your feet are touching the earth and then that helps. I think, create your own ~~your~~ sense of identity too.

For this participant, her connection to a place is deepened by the food and water that come directly from that place so as to be more part of the natural system, and more in tune with the rhythms and cycles of the seasons and years.

Another participant had a couple formative experiences as a child that, “made a big impact, dare I say? They were kind of spiritual experiences that I didn't really understand until later.” Both experiences were when she was alone in nature and felt strongly connected to the natural world, in a way that felt like “church stuff. But I'm not in church. Right?... I felt reverence. But not this expected reverence... like when I was in church.” Here she connected her known religious identity to something unknown that she felt in the outdoors. She then had the realization that she could feel spontaneous reverence for things in the natural world, which helped her to develop her identity as a “nature person”.

Not all teachers or students identify as a “nature person” and it became apparent through this research that this at least in part correlates to issues of access. It is not always easy to incorporate the outdoors into the curriculum, specifically for students in the city. For example, one participant said:

I remember doing... a FOSS kit. We were looking at the moon and so the kids were supposed to look at the moon every night. Half the kids are like ‘my parents won't let me outside to look at the moon. We don't go outside at night. We don't have windows’ ... I was like wait, can't you just like walk out at night? ‘No, we don't do that. So we can't do this.’

This teacher grew up in a more rural place and went to teach in the city. Privilege and access present here as factors in curricular design and educational reframings that expose the intersectional complexities of learning in relationship to identity and space.

“I Want to Know a Place From It’s Rocks”

Many of the teachers in this research draw from the natural world as a common experience to make sense of other subjects. Examples provided included, using weather metaphors in writing or using landscapes in art to explore a narrative. One participant is a scientist as well as a musician. She sees connections between music and natural phenomena:

Students are asked to listen to music and then share what they are thinking... in many of these instances it’s usually something in nature... not human related... there is this inherent connection that we all have... that’s where our mind goes... especially when you were young.

She went on to say that an educational goal should be for students to regularly connect ideas in the context of natural phenomenon. Place is centered as a way to build community through common human experience, such as how two strangers can meet up and talk about the weather, the moon or the stars anywhere in the world.

Teachers who have the opportunity and interest to develop a relationship to the natural world are then able to provide modeling and opportunity for their students to construct a relationship to a place. One participant, who had many formative experiences of being in nature as a child, said:

We’ve been studying weather and... I haven’t really seen it engaging them... But then we started to talk about clouds. And we started out just outside sitting and sketching the clouds, and what do they observe? And we talked about how all different cultures have looked at clouds... not only for telling... weather patterns, but important for navigation... I also want to always present this undercurrent of

knowledge that is... a lot older and a lot more intuitive than empirical science... I share the story of Luke Howard... the man who came up with a nomenclature that we use... and the fact that when he was 10, that's what he loved to do was look at clouds and draw them... bringing it back to that direct human experience of being outside in a particular place and observation. When that happens... I've observed that students can then get really excited and kind of take ownership of their own learning and their own observations, and that's super exciting.

This participant clearly uses her own value of natural phenomena to guide her students to develop a relationship with a natural phenomena, such as clouds, as a way to construct deeper knowledge and understanding of the human experience by connecting other theories and histories to the same phenomena.

One participant used her knowledge of the natural world to connect to a new community: "Most of my life, I wasn't that interested in how things are called... And then I'm more interested in these things now and... I feel an urge to know the place from its rocks. And... from the way it's built." After becoming part of the NOAA grant, she wanted to know the places that other participants were referencing, so she drove out and hiked around in them. In this way, she had a physical experience in that place so as to have a reference when discussing that natural place with the larger community.

Other participants discussed their sense of belonging to a place. One participant preferred to be deeply connected to the place, and to the community she is working in. She appreciates being connected to people who are also connected to the place. For another, even though she grew up in the town where she now works, she doesn't live there, and is

seen as an outsider. She finds it interesting that even though she has a long history with the place, she doesn't feel accepted by the community because she doesn't currently live there.

Another participant reflected on her changing relationship to place and how it informs her teaching. As a child, she was very grounded in the place she grew up, but always wanted to leave, so later traveled. However, she realized that she felt better when she committed to a place, though for her it was three places that all seem like home. "And... people have asked me, would you move anywhere else? I'm like, nope, those are my homes. If I'm going to live anywhere, it's going to be one of those three places." Her deep knowledge and understanding of these three places makes her feel more connected to each place. She then uses these places to draw from in her teaching. She offered that, "when we have this sense and love of place, then there's also protection in place.". She also shared that her early education did not include the study of the local environment or people, as. "...there wasn't that sense of reverence... for a local place... when we do that, as educators, we help build communities... [town] is especially wonderful because there is such love and a fierce commitment to place by the community." Her own identity development is connected to place, and translated into how she wants to root her teaching in place so students have a different early educational experience than she did:

All my science comes from [local places]... this curriculum about the Farallon Islands and the common murre (a bird native to the islands)... for fourth graders to tie into gold rush because [egg collectors] used to go out there... And there was actually a war out there over the eggs, and then the murre population rose again. And then there was an oil spill... and the murre population plummeted again. And then they're rising again. And then recently, there was a die off... from sea temperature rising, or

the lack of upwelling... And I love seeing... all the different agencies working together and... building those relationships to become more involved with the people who are committed to a place. And I think place has to do also with our human relationships and making commitments to treating each other kindly.

The place provides a connecting phenomena for the people of that place to identify with, so that their identity becomes increasingly more rooted in physical location through developing and deepening relationships through a commitment to that place.

“Learning Takes Place in Different Ways”

When we begin to critically explore the spaces we inhabit and in which we learn, we become increasingly aware of how they stimulate or numb the senses, create expectations for how to behave in them and open up new possibilities for understanding systems of connection. And by changing our location, we change our approach to the people within that space, which provides us with greater insight into our own identities in the mirror of what we experience.

One research participant discussed the importance of creating places where kids can go just to have open-ended experience without real direction:

I would like... a learning environment that more resembles... museums and different after school activities where you have more freedom. Children have more ways to author their own learning... I just think that they're curious enough that if they bump into a topic or if they are exploring some things they will want to continue with it.

This participant also had an early experience where she learned by being around professionals early in her career, and thinks that it is important for kids to be in spaces with adults at work:

I think hanging out is one of the best ways to learn, just hanging out next to people who are interested in something, even if you are not, but you're interested in them, or hanging out next to adults who are doing something and just like to be there.

There's no value for hanging out in our learning environments, that if you're not doing anything, then you're not learning, you have to be engaged in the way that we decide that you're engaged... And learning takes place in different ways. And we just don't let it happen. We're so much measuring all the time as if... you get something and then you have to show that you got it. While... just being with someone for a year we get so much from them, just by being with them. The way they talk, the way they are doing stuff. We don't allow these things to happen. I would... take the classroom, [and] give it to artists' studios. Get the kids to hang out there.

This idea of repurposing our ways of relating to learning spaces in order to promote an approach to learning that is student driven and governed by “the law of two feet” allowing students to be drawn into the spaces that interest them — would also require that we change the way we measure the experience of learning, and student growth. Changing spaces influences the way in which we relate to those spaces, so by changing our physical spaces, we also create the space to change, explore and reflect upon our human identities.

For a person who moved several times I really know... how comfortable a place can make you or sometimes... too... comfortable... the most obvious thing... you grow up in a very urban area and then you move and open up, the whole way that we're

thinking is very much about the way that relates to the scenes and contours of the place... we were so in our body... as a culture, we forget that learning is very much embodied... I believe that my brain, even if people will know how to take all my memories and put [them in a computer]. It won't be me once it's not with my body in space.

The physical space defines the expectations for success therein, and also reminds us that learning is an action, one we must do with our bodies, not merely a passive pursuit. The increase in the use of technology has provided more opportunities for passive learning, when our bodies and brains are hardwired for holistic, full body learning.

For another participant, she notices how the change of place influences her own approach to that place and the people in that place. "I like to change scenes. I like to change [to] different settings and see how... I express thinking in new ways or meet people who usually, maybe in another setting wouldn't meet. And I love to collaborate." By changing places, she is able to change how she presents herself, or to meet new people who may provide different influences or ideas.

Another participant explains how significant place is in child development: when you teach through place, they are completely immersed in it... And children live and learn...so much through their senses... So early on, I think it's absolutely important to ground [teaching] in place so that all of their senses are there, their gross motor skills of walking through the lagoon or climbing trees, that's being activated and building their intellect."

This example demonstrates how the physical interaction with a place actually builds the sensory awareness of children, and develops their motor skills. Our human selves have co-

evolved with the natural systems and we grow through our interactions with the physical places around us.

The Expectations of Space. One research participant also interestingly noted how places often carry implicit expectations for how to meet and engage therein. For example, when kids go to the library, they know they should be quiet. When they go to the Exploratorium, they know they can touch and explore everything.

I think places... have norms, and assumptions and narratives based on what's happening there in that place... I'm always thinking about what this place communicates to me. If I've been here for a long time... it's one thing but... if I enter a new place, there are these cues... that are... subconscious but they tell us... what is the expectation for our behavior... what it means to be successful... in that space.

There are some important extensions to this proposition, that while in the more obvious environmental expectations, certain behaviors and attitudes are both individually and collectively activated, how pervasive must these tendencies actually be in all places and how might we understand how to activate the best conditions and potentials for learning by finding or creating the most conducive spaces.

Centering Human Systems in Educational Reform

Perhaps the greater realization of the importance of human systems will influence the ways in which these systems are supported. Some of my participants shared ways in which they worked with people in schools to help them develop professionally. One participant said she was coaching a superintendent and, “just helping her understand the need to look at people’s assets, not always looking at that deficit model.” She recognizes the need to consider all of the needs of all of the humans in the system in order to bring about

lasting institutional change, going so far as to say, “We can’t expect kids to achieve this if we don’t help teachers do this.”

This Freirian approach occurred as a deep learning for another participant who had in the past been hired to help a school in an impoverished industrial area of Kentucky shift to a Waldorf approach. She had not been given much background about the school before arriving and came in with an idea on what things should be integrated before even meeting anyone.

When I went in... all of the people in my group were local people who lived in the community, local teachers, aides, just five African American women... and [they] had this almost disdain for what was happening at the school because it came in like ‘we’re changing the school and changing this community.’ And so I had to... bonk everything that I planned, and just really listen. I found out that’s what those women needed at that point, was someone to listen to them... They were Southern Baptist and the Waldorf school is trying to put it in a maypole, and they’re like, ‘no’. It was probably one of the most profound experiences I’ve had in education, just having some really honest conversations with those women... so it was actually professional development for me... it was a real education about... the state of those metropolitan areas in the Midwest, the south. I said, Okay, here’s what Waldorf education is... I translated it to a meal... And they’re like... ‘Oh, it’s kind of like this model that we like.’

By centering both the identities and location of the teachers at this school, and starting there, this participant was able to provide them with some new ideas and practices to build on what they already had established.

Another participant described using marketing training she had received in the business world to inform work she did with teachers by relaying that, “it was all about learning how to market, really listening for the need, and then taking what you have and shaping it around the need.” She had learned to center this practice in her work in education by listening for the needs of the teachers and the district office, “I would listen, listen, and I would ask questions to the district office about what is it you really want?” Then she would go back to the teachers and listen for what they needed and then she would “help mirror the two.” Through this process of deep listening she was able to understand the real reasons for both sides and help to find middle ground.

Because if I went back, and my teacher said, oh, here's why that won't work. I would say, ‘Tell me, what would make it work? What's the tweak?’ And then I would go back to the district office people and say, ‘okay, you know, what, why don't we just reshape this?’ So I never tried to just go in and shove something down somebody's throat. And I think you learn that in marketing, because it makes or breaks a deal.

This educator understood that she had to listen for the human needs behind the policies, and to forefront the assets of a community as a way of building capacity for innovation and collaboration. According to another participant, when you look at a school with a systems approach, we “have to find the common thread that goes all the way through,” and that what people forget is that if you move one part of the whole “it impacts something else in the system.” She goes on to discuss how doing deep systems work requires including all of the stakeholders, and to be able to anticipate how all of those stakeholders will be impacted with every decision:

You think, oh, I solved this whole little problem here. No, wait, you really have not because you just caused a bigger problem over there. And it's complicated work, because it involves compromise, but you can't compromise if you don't see the other person's perspective. And I think that's where people go wrong. They don't understand the complexity of the system.

In order to bring about lasting transformative change in education, we must approach schools in this way and provide opportunity for all stakeholders to weigh in, and also be able to practice empathy and anticipate how other stakeholders might feel as a result of certain decisions in human centered systems.

Analyzing the Pandemic

The significance of a physical place for education became clearer in the COVID era, in the relative absence of traditional places for learning. When we removed the humans from the traditional teaching space, teacher identity reoriented as they were removed from the supportive relationships of colleagues and educational teams in the place of school. For one participant, the recognition of the community built at school became clearer, especially after she returned to the classroom:

I guess I'm seeing even more through the pandemic, how community is such an important part of place... And it's one thing that I love about being back in school right now is to... have this sense of community again, because that is a part of place that has really been absent in some ways... And I think the classroom is, again, kind of that rhythm, the ritual of going out to the marsh, kind of establishing it with a community.

This participant uses the places on and off campus to build rhythm, routines, and rituals with her students, and this was hard to replicate when we were in our own homes, out of place.

Some teachers also suddenly recognized they had a greater connection to their home community as a result and recognized the opportunity to have students draw upon their home places as well. And as a result some teachers shifted their curricular approach to provide opportunities for greater place-based inquiry. The physical space of school connotes certain expectations, such as wearing shoes, and sitting in a chair, which were quickly ignored as students showed up from bed, with barely their noses showing. For teachers, too, their work and teacher persona became enmeshed with their home persona. Family pets joined classes and disrupted lessons, moms yelled in the background, the internet froze, ~~you~~ students saw their teachers' kitchens, none of which were typical hallmarks of a traditional school setting. Being asked to take on distinct elements of our identities—sister, student, daughter, mother, teacher, husband—all within one space was suddenly a challenge. Some teachers and students could set up separate spaces to do their work from, some went to school if they could. For some, this blurring of identities was challenging. Others found it overwhelming, and even impossible, still others found it liberating.

One participant expressed her own challenges with focus:

I can't focus on Zoom... I'm with you right now. But generally, if I'm in a one on one... I'm totally into it, right? All the other times, I'm like, video off, I'm doing other things. I can't be bothered. I'm like surfing the internet, whatever... Because I don't care right now. Mostly. I'm not going to [meetings] anymore. I can't do it. I'm not getting

anything out of it. So I'm like, why am I doing this?... I don't feel like I can take that information and actually apply it... So then I'm like, well, why am I doing this to myself? This is really a waste of time.

For this participant, being removed from authentic human interaction made it impossible for her to focus, and caused her to question her own involvement in a practice that didn't serve any purpose in her life. For another participant, the disconnection from place provoked more escapism into the digital realm:

I'll tell you one of the big ways that I get disconnected to place and I'm being really open. And this is a habit that I'm really needing to break. And I think I'm going to partly blame it on the pandemic. Sorry, but I feel that this last year has had us so much on this electronical place that isn't a true place. We're like 'Okay, I'm gonna go look up things on my phone. What's happening, but is Biden done already?' It... kind of messes up our sense of timing, right? And I think when we can really drop into a place and all of its natural rhythms, like through the food, through the seasons, through walking in a place, it helps us have this broader sense of time... for me, it's a mental health thing too.

For this participant, and for many other teachers, the disconnection from place was unsettling, and hard to avoid as our main ways of connecting were in the digital realm. Being in a physical place grounds us in familiar rhythms, and we are in a community of learners operating within the same system. When at home, we missed the morning coffee with the kitchen worker, or the check in over snack with a coworker, or the movement from one part of the classroom to another for different activities. The interdependence of the human system at a school keeps everyone on task, as we work together to play our part

in caring for the children in our care. For many of us, the dissociation of teaching “out of place” without our co-workers was challenging, and disorienting.

We did this all amidst an unprecedented global pandemic that upended everything we know about education and required educators to learn a whole new way of teaching, while also caring for their own families. One participant was confronted with a math lesson that required physical manipulatives, and group work, so she improvised:

Yeah... this isn't the best, but I'm exhausted, and I'm tired. And I'm over teaching right now. But anyways, there was some whole big confusing thing where each kid was supposed to have a million manipulatives of mats and... the little individual white pieces... And it was gonna be this group thing where they have all these shared manipulatives... And I was like, No, this isn't not gonna work at all... Okay, what are they trying to teach the kids here? They're trying to teach them place value and expanded form.

This teacher is masterful in the classroom, and seamlessly uses manipulatives and groupwork to support student learning, but without the physical place and proximity, let alone the manipulatives, the strength of this lesson was, in her opinion, lost.

Reconfiguring and Rediscovering Space During the Pandemic. One thing COVID showed is that, for some kids, being at home freed them from the social constraints of school, and they were able to focus on their academics and be more successful. One participant noted that:

It depends on the kids, right? Because I think honestly, there are some kids who are doing okay. Would it be richer if they were in the classroom? And had their hands on

something, and they were in a group of kids, and they were doing it differently than a breakout room?

Some students were happy to be removed from the school setting where they perhaps didn't feel safe, or didn't fit in, or didn't speak the language. For these students, the opportunity to learn from home was a positive one. Different learning styles made some students more capable of learning on a digital platform.

However, though these students may be thriving academically, they are missing out on the important SEL learning that happens from being at school.

My one son, he wanted everything to be hands on, collaborative, needs to be there, needs to be a part of a group, the other one, he would have been just as happy to do everything on the computer...but here's the thing, the one that loved the computers, and there are those kids out there now, that like just like to do it all on their own. They don't get exposed to be forced to learn the other way. Right. And I think that that's a shame as well, because even though they look like they're doing so well, because they're mastering the standards, they're not developing the communication skills as well as they should be, or some of those other softer skills that maybe they need to survive in the world at large out there.

While the digital world alleviates the stress of the social world, for children who struggle with SEL they also need supported opportunities to learn how to navigate the social world.

For some, being stuck at home provided a greater opportunity to connect with their local places in ways they may never have before. One participant said:

I...fear the world is much more apart than it used to be. And it's harder to get to places... now that we're all stuck in the stay at home or...just fear to go other places or told not to go. So...I want to be more part of the place that I'm at.

Participants took walks around their neighborhood in the middle of their work day, or took meetings on the phone while working in their garden. Students were tasked with making nature guides of the plants and animals in their yards, or local parks, and given assignments to measure their kitchen, or couch, in math class. Yet none of these activities provided opportunities to learn with peers, or with the teacher as mentor. For this reason, they are not substitutes for the progressive methods of teaching and learning we know to be beneficial.

The significance of place has been brought under the microscope in the past year, as people around the world experienced how to operate in a smaller sphere than they are used to. For educators and students, having school “out of place” provided a clear view of what is important about school for most, the relationships they have in that dedicated place for learning.

Conclusion

The primary research question for this study was: How do elements of teacher identity affect the process of curriculum design? Teacher identities extend beyond the role they play in the classroom to encompass the larger breadth of their lives, and include such influences as career path, motherhood, travel, hobbies, mentors and the places they have inhabited. Their identities are related to race, class, gender, and socioeconomic class. It was also found in this research that teachers who value a relationship to place will cultivate opportunities for their students to observe natural phenomena in order to provide them

with context to connect with future teachers and mentors and fellow humans about our shared physical sphere. Research participants noted that through the loss of space during pandemic we were able to better understand the importance of human systems to educational institutions, and to identify the value of the services and support structures they provide to students, teachers, and parents.

Chapter 5: Discussion

Three major findings emerged through this research. First, the participants spoke to their intersectional identities, especially in regards to who they are as people of the world, and that these broader connections inform and support how they serve in the space of learning. Second, place was found to play a substantive role in the formation of identity. The research participants noted places to which they had travelled and inhabited have shaped the networks and systems to which they connect in education and into the natural world. Third, human and environmental systems were found to provide a wealth of assets that support equitable educational reform, including during a pandemic. Even with remote learning teachers found ways to reconstitute and reinhabit space for themselves and their students.

There were a few similarities between the findings of this research and the literature. For instance, both demonstrate how reflective practice allows teachers to change their identity in an iterative process, unlearning previously held notions or beliefs in order to better support the formation of student identity in the classroom (Greeno, 2002; Ashlee, et al., 2017); and that it is only through key events or experiences, and the opportunity and ability to reflect on these events and experiences, that we change our identities (Freire, 1970).

A second similarity between the existing academic literature and my research findings is that we are constantly constructing our understandings of ourselves and the world around us (Beck, 2016; Carlone et al., 2015). This research also found that teachers form new identities throughout their careers through key events, which in many ways mirrors Freire's (1970) notion that authentic reflection can only occur through people's

relationship with the world. This positions the transformative teacher as one who is constantly in the process of recreating themselves as they uncover new understanding through common reflection and action.

Like hooks (1994) this research found that if a teacher intentionally engages with their students in creating a classroom community, this brings up real issues they face in the real world. Because of this, it becomes all the more important for teachers to commit to self-awareness and well-being, as they cannot support this critical work if they themselves are not self-actualizing in their own practice. Teachers can be more effective in promoting an engaged pedagogy when they are self-actualizing, as this allows them to provide a space of authenticity to their students as they embark upon their own process of self-actualization.

Uniquely, though, this research found that also during a pandemic in which traditional spaces became deconstructed, there were ways that space could be reconstituted by positioning the natural world as a common classroom. A couple of examples include having students make science observations in their own backyards and doing engineering challenges with objects found around the house. It was also revealed that teacher participants understand themselves more holistically as people of the world who come to the profession of education with experiences such as motherhood and systemic sexism. These provide key identity shifts that have lasting impacts upon future decisions in their daily actions, including those they make in the classroom.

Implications for the Literature

Whereas Freire (1970) recognized that there are general systems of oppressors and oppressed, this research furthers the conversation by identifying specific forms of

discrimination that women have experienced in their lives derived from their experience of being of mother, as well as the particular tapestry of the spaces they inhabit. This supports Gilligan's (1977) "ethic of care" which proposes that there is a tendency for women to orient toward a different moral privilege than men, and that this difference can be attributed to real life experiences focused on their responsibilities to others and experience of the world around them. Consequently, women are positioned to be interdependent in a world that promotes independence, and there is much work to be done to find the correct balance between the two.

Teacher identity influences curriculum design because the reflective process of self-discovery provides opportunities for educators to understand their own identities, and to adjust their own choices in the classroom to perpetuate or disrupt the circumstances which formed those identities. My interviews illustrated the process of the ongoing identity formation of five educators, and considered how their identities and relationship to place have shaped curricular decisions. First, their formative and ongoing life experiences, such as sexism, mentorship, prior life experiences, and self-actualization, provided opportunities to reflect on their identities, and to use this reflection to make decisions about what and how they taught in the classroom. Secondly, teacher relationship to place influences identity formation, and orients a teacher towards if and how they may use the natural world as a teaching and learning tool. Thirdly, the place, or position, of an educator embedded within the larger human system of a school or educational institution must be centered when embarking on school reform. Finally, with education being removed from its traditional place during the COVID era, the significance of a physical location for both teaching practices and teacher identity became clear.

The findings of this research suggest that educational reform opens the space to the holistic identity of teachers as people of the world to support those ways by which these identities inform and can give life to curricular and pedagogical decisions made in the classroom. We must center the identity of the humans and their relationship to place in the designing of curriculum.

Implications for Practice and Policy

The findings of this research should encourage teachers in bringing who they are as citizens of the world to the space of learning, and to draw upon the authority and wisdom of their own lives in the creative development of learning experiences. These findings also support teachers in expanding the place of learning into the large natural environments in which the teachers and students otherwise live and play, inclusive of watersheds, trails, estuaries, and desert landscapes, in order to study the science and cultural ecology of these inherent third spaces. It also seems wise for us to implement what Friere called “problem posing education’ that centers critical thinking about what is happening to the humans and place one is in, and follows that thread to support transformational learning. It is only by becoming aware of one’s identity and how it was formed that a human can begin to think critically about their place in the world, and teachers can both model and support this awakening with their students.

The educational system is the backbone of identity formation within our society and has manifold and far reaching effects upon the perpetuation or dissolution of commonly held beliefs. By engaging in self-reflection in order to identify their positionality, teachers can better understand their feelings. It would behoove the educational system to create opportunities for teachers to reflect on place and their positionality within the place. This

kind of reflection must be embedded within curriculum reform and professional development, as well as foundation to teacher education and pre-service training.

Teachers should also, based on the findings of this research, have a seat at the table for all policy and curriculum decisions as a way of including the network of intersectional identities and the places in which they learn. In order to provide context for scientific phenomena, and inquiry driven, place-based learning, following student interest is vital to supporting the cultural, social-emotional and environmental literacies necessary for our planet to thrive, as the nourishing soil for the network of natural and human systems to grow in turn.

Limitations of the Study and Directions for Future Research

This research was limited in its scope and reach. There were only six research participants, all of whom were cisgender, white educational professionals serving in a small geographical area (primarily one relatively affluent and “outdoorsy” county in California). The research was conducted in less than two months and included only qualitative data. No students or teachers were asked about their desires, and it did not include participatory action research or design. I am also a white middle class, mid-career educator with higher education, so my positionality biases me towards a certain worldview and I am sure there are many things I overlooked as a result.

For future research, it would be beneficial to broaden the diversity of perspective by including teachers from other geographic regions of the country in order to understand the impact and influence of place on identity. It would also be useful to learn from other gendered and racial identities to see what factors most inform and correlate to pedagogical practice. It would also be informational to ask a wide range of teachers what they might

want to know and understand better, and orient my research around that need. Finally, it would be helpful to interview teachers from a range of educational backgrounds to understand how education affects identity formation.

In addition, due to the limitations of my study, and the construct of time, I left out a significant factor in this year of COVID - the Black Lives Matter Protests that strengthened the inclusion of anti-racist pedagogies. I am aware of the causes and effects of these protests, and of the importance of dismantling our curriculum to get at the structural inequities inherent in our culture. However, due to the original focus of my research, I chose to leave this out. Were I to continue this research, I would explore the intersections of the BLM protest, the rise of anti-racist teachings, and lessons learned from the COVID-era.

Conclusion

At the end of March 2021, I spent three days in the high desert on a backpacking trip with my college roommate and our three tween sons. We both came to enjoy backpacking in high school and college. Twenty years of friendship, two marriages (one divorce), four kids, over three decades of combined experience in elementary through high school classrooms, and two Master's Degrees in Education later, we have had ample time to reflect on why we willingly shoulder packs and strike out down a path straight into the wilderness. We love the High Sierra lakes under the full moon, and the joy of a hot meal over laughter after a long day. We also value the environment we visit, and practice Leave No Trace ethics.

Along the trail, we discussed the educational system, and our culture as a whole, and the philosophical question of why education has to be "efficient"—to produce measurable

outcomes that determine the success or failure of children and their teachers—because this is something that deeply bothers me after 13 years in the classroom. I also asked why it is that we spend so much time with standards, tests, and boxed curriculum, when it is so clear from ample research that little of this will prepare students for the unknown challenges they will face in their future. Moreover, this approach is proving to be detrimental to the development of divergent creativities and honoring neurobiology that could in fact be the only thing that could save us from ourselves.

As I explored these questions, I became a subscriber to the Facebook group “The Nap Ministry,” after finding myself increasingly aware of the oppressive nature of productivity culture, and wanting to counteract it, both in my inner psyche, as well as in the greater context of social justice amidst the #BlackLivesMatter protests of 2020. The Nap Ministry “argues that rest could be a form of resistance” for Black women in particular, but it also illuminates the true exhaustion lived by millions of people living in oppressive systems everywhere (McCammon, 2020). I myself am a product of an education that defines my worth by my productivity, and I have benefited greatly from the various layers of privilege I have by nature and nurture. Even as I am writing this very thesis, I cringe with the awareness that I am perpetuating the very system I know needs to be dismantled. My drive to attain educational achievement has been ingrained in me from my early education, that this will posit me as an “expert” in my field and confer greater status and value to my teaching, and to myself as a human. I am keenly aware that by writing this thesis and attaining a Master's degree, I am buying into the system that promotes this kind of hierarchy, and furthering its validity. I am positioning myself as “higher” than others who have not had the temporal and financial privileges I have that are vital to the pursuit of

higher education. I am also conducting this study amidst a global pandemic and political chaos, which makes my research seem irrelevant in the face of rising COVID-19 case counts.

It is time to commit to a different way of operating. [A recent New York Times article states](#): “We are often presented with two models of leadership...The old model is hierarchical. It’s exclusive. It’s about talking, not listening... The new model, by contrast, is about empowerment. It’s about listening, not talking. It’s about compassion, empathy and humility. It’s about understanding that power is amplified when it’s shared.” I believe that we need to enter into this new model of leadership in every sector of society immediately and prioritize deep listening. The immense pressure to be a mother of two school-aged children, partner to an interracial man, a classroom teacher in a new position, and a union president negotiating the health and safety guidelines for my school community amidst a global pandemic, the Black Lives Matter Protests, wildfires, and the rise of nationalism, has made me reflect deeply on my part in the problem, and what could be done to transform this system.

Our current methods for improving education—such as the numerous trainings, curriculums, and mandates that I have attended and adhered to throughout my teaching career—consistently promote a linear model to students’ educational journeys. The educational system clearly boils down to the production of workers ready to contribute to the production of economic goods and services. However, increasingly, as society grapples with the demands of the Black Lives Matter Protests and the threats to U.S. democracy in the wake of the January 6th insurrection, it is clear that this established educational system needs radical transformation. There is a binary concept that efficiency is linked to productivity and therefore the creation of economic goods and services is counter-

productive to the efforts of incorporating the practices of decolonization and authentic application of anti-racism in the educational system. Teachers must deconstruct the very system of education that produced them, and explore and question the structures currently in place that propagate the rigid and capitalistic process of education. This is challenging for those unwilling to do the work of identifying their own bias and investment in the current system of oppression. This system is in need of change and we need to strengthen students' curiosity and exploration to be able to confront the problems they will encounter in the future, and teach them to be critical thinkers in practice, not just on paper. Even with much research plus real-time evidence that our educational system is out of date, teachers across the country continue to march on as participants in a system they no longer agree with, but are forced to perpetuate. To use Freire's terms, the system of oppression perpetuates itself. The questions remain: Who decides what and how we teach, and how education, colleges, and schools are organized?

There is so much academic research on educational reform, and yet it is not significantly changing the traditional pedagogical approaches inherent in our American educational system. None of an educator's work can be transformative unless they consciously choose to subvert the system that perpetuates the hierarchy of power, be it for social or environmental change.

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Appendix A: Interview Questions

How do elements of teacher identity affect the process of curriculum development?

How do various stakeholders designing an environmental education curriculum understand the intersectionality of self and place?

1. What do you believe are the most important aspects of your identity? (Follow up: race? class? Gender?)
2. What does your identity mean to you, as a teacher?
3. How does your identity influence how you decide what to teach?
4. Tell me the story of how you decided to be a teacher/educator.
5. What is your understanding of the term “place”? How would you explain your relationship to place? To community?
6. What does this relationship mean to you? (If the participant is unable to respond, follow up with: How does it make you feel?)
7. How long have you been in education?
8. How did you get involved in the NOAA grant?
9. What would you consider your educational philosophy to be, and why?
10. In your opinion, what is the purpose or goal of education?
11. What is your relationship with the environment/natural world? How does this relationship inform your teaching?
12. Can you walk me through one of your science lessons?
13. What is it like for you when you teach a successful science lesson? Follow up: How does it feel?
14. What would you change about teacher education if you could?
15. What challenges do you face when trying to implement new teaching approaches or ideas?
16. If you could teach however you want to, what would you do?
17. In your opinion, what is the purpose of professional development?
18. What makes professional development helpful, or unhelpful?
19. What professional development have you done that still informs your teaching?
Why do you think this stayed with you?