DISRUPTING COMMON SENSE THROUGH TRANSFORMATIVE EDUCATION: UNDERSTANDING PURPOSEFUL ORGANIZATION AND MOVEMENT TOWARD MEDIATED PRAXIS

by

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Disrupting Common Sense Through Transformative Education:
Understanding Purposeful Organization and Movement Toward Mediated Praxis.

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ABSTRACT

This dissertation was motivated by a longstanding interest to understand how to design and sustain robust learning ecologies for youth from nondominant communities. Toward this end, this study examined El Pueblo Mágico, a social design experiment, designed to re-organize traditional forms of learning for novice undergraduate teachers and elementary school children.

Grounded in cultural historical theories of learning, social design experiments (Gutierrez & Vossoughi, 2010) attempt to re-mediate functional systems by saturating environments with new tools and practices oriented toward transformative ends. Designed to foster mediated praxis, participants engage in a tool-saturated ecology organized around practices that promote reflection, theory-building, and a new pedagogical imagination. The present study examined the processes of mediated praxis of undergraduate teachers whose learning spanned two environments, an undergraduate course and an innovative STEM-oriented after-school program.

Specifically, this study sought to understand: 1) shifts in novice teachers’ common sense notions around teaching, learning, and culture, 2) how the learning ecology was organized to foster shifts in their common sense understandings. By documenting initial undergraduate perceptions of teaching, learning, and culture, students’ commonly held assumptions were recorded. An important finding was that narrow notions of teaching and learning and static notions of culture have the potential to foster banking models of education (Freire, 1970), deficit thinking (Valencia, 2011), and the “othering” of students of color (Deloria, 1998). Through the appropriation of new theoretical tools, reflective-mediated practice, and sense-making of those
new understandings in joint activity with children, undergraduates examined their previously held assumptions and engaged in new learning activity. This study also identified three tenets central to mediated praxis and design: 1) The cultivation of a “mirror” to create a space to refract and work through inner contradictions and foster a pedagogical imagination (Gutierrez & Vossoughi, 2010); 2) The organization of a simultaneity and layering of learning which positioned all participants as learners in ways that challenged the binary roles of teacher and student (Rogoff, 2003); and 3) The development of boundary artifacts that stitched together theory and practice across environments (Gutiérrez, 2008). This study has implications for teacher education, design based research, and higher education.
DEDICATION

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CHAPTER I

INTRODUCTION

When my dad first purchased the family van, the all-black service vehicle resembled a metal tube with no windows and no interior. My father refurbished our van by adding windows, swivel chairs, a table, and brown shag carpeting on the floor (and the roof!). My brother, sister and I were so excited when my dad brought home the remodeled van that we exclaimed we wanted to sleep in it every night! This van transported us annually to México. The five of us would squeeze into the crevices of the large service van along with encarados (packages) for our family. During one of our trips back to Colorado, the engine caught on fire. My mom helped us all escape unharmed, and with the efforts of my dad, eventually the fire was extinguished. Unfortunately, the engine died. My uncle and his family drove across the state to pull the van and its cargo for the rest of the journey.

Although I was scared at the time, I have happy memories of all of the kids sitting in the burned van, listening to scary stories of la llorona, and laughing at my cousins’ stories. My dad spent the next few days under the hood of the van to coax it to life. My ears perked when I first heard the engine start up, and I quickly ran outside to investigate. When I looked inside the hood, I saw half of an old yellow oil metal can. I asked my dad what it was, and he said it was now part of the engine. My dad explained that the piece was too expensive, and ‘Lo que no se puede, pues uno se lo tiene que inventar’ (what we can’t get, we have to invent).

I tell this story for a few reasons. First, I want to highlight the contradiction that is found in this narrative: the complex knowledge and creativity that is necessary to fix the van, yet the assumptions of “smartness” or “intelligence” that might undermine the ability of a man, like my dad, with a formal fourth grade education. My dad had transformed the interior of an old service
van with the creative and resourceful use of a metal can. He revived the engine from the ravages of a fire. This task involved sophisticated cognitive work. For example, he needed to use his creativity to imagine an alternative to the required, yet costly, piece. He also had to exhibit a deep understanding of the underlying mechanics of the damaged piece to be able to cut, engineer, and transform the tin can into a functional part of the engine. My dad gained the knowledge to perform this engineering task primarily through observation, participation, and actions in his daily life and not through a formal school-based education, what Rogoff (2004) argues is learning by intent participation.

Such an act may seem out of the ordinary, but this practice of problem solving, creative imagination, improvisation, and applied knowledge of engineering were routine in my upbringing. This story about my father is just one from among countless stories I could have told. I could recount how members of my family used everyday knowledge and leveraged it in ingenious ways to solve local problems. For example, consider how my mom, despite primarily speaking Spanish, understood the importance of a quality education and challenged the school district to take me out of remedial classes in the second grade. These were routine practices among my family and friends—practices that also have been documented in the literature, as in the research about families’ funds of knowledge (Gonzalez, Moll, & Amanti, 2005).

I highlight these alternative narratives of human intelligence because, as Mike Rose (1989, 1995) has argued, everyday problems and tasks involve significant cognitive work and imagination—the kind of work and problem solving that are commonplace in nondominant and working-class communities. However, to understand such practices as important to learning, we must begin to reframe how we see them. Following McDermott and Raley (2011), we need to see that ingenuity is a daily practice; such reframing involves thinking broadly about what
“knowledge,” “intelligence,” and “ingenuity” mean. Without this reframing, everyday knowledge will continue to be misunderstood and underutilized as a resource or a tool that promotes robust forms of knowledge in formal learning environments (Nasir & Hand, 2008).

There are many reasons for this underutilization. Although influential work has been done in the field (e.g., Engeström & Sannino 2010, Gutiérrez 2008, Kirshner, 2010; Nasir, 2005), we still need to know much more about the nature of everyday knowledge and how it can best be leveraged in organizing for robust learning environments.

Additionally, there may also be concurrent influencing factors that are at work. In this study, I was interested as well in how values and ideologies that existed about groups and communities, in particular nondominant communities, played into perceptions about a student’s ability to learn (Perry, Steele, & Hillard 2010; Solórzano, 1998; Tatum, 2007). In particular, I was interested in how such ideologies and beliefs had implications for the social organization of the classroom and how they influenced a student’s learning and educational trajectory (O’Connor & Penuel, 2010; Gutierrez, 2008; Rogoff, 1994; Solórzano, 1999). I argue that many of these values and ideologies are so grounded in our “common sense” (Gramsci, 1999; Haney-Lopez, 2003) that it is necessary to look at models that work explicitly to counter our normalized views. In this study, this involved examining a model that purposefully organized learning in a manner that harnessed everyday knowledge to promote expansive forms of learning, as it worked to challenge narrow views of “expertise,” “knowledge,” and “intelligence.”

Thus, my interest was twofold. First, the proposed study sought to investigate how environments organized learning to elicit and utilize everyday knowledge as a productive resource for expansive learning. Further, I was interested in examining how participating undergraduate students’ conceptions of learning changed over time. This examination involved
understanding how this model organized participants’ engagement in reflective practices.

Gaining a deeper understanding of how to create a robust learning environment for nondominant youth was an aim of this work. In particular, my long-term goal was to extrapolate what I learned from this study to help me understand how to design learning environments that promote an expansive view of learning.

With this objective in mind, I selected a learning ecology, *El Pueblo Mágico*, which allowed me to document, and gain insight about, the issues discussed above. In particular, the ecology of *El Pueblo Mágico* provided the opportunity to examine settings that attempted to leverage everyday knowledge among children and novice undergraduate teachers and to examine the ways in which participating adults shifted their understanding of learning, the role of cultural mediation, and their beliefs about nondominant communities.

**El Pueblo Mágico: An Ecology for Teaching and Learning**

*El Pueblo Mágico* was a learning ecology designed to leverage university, community, and school expertise. It was a dynamic program with many moving parts; however, in my study I focused primarily on three activity systems within *El Pueblo Mágico*: an educational psychology undergraduate course, the after-school program ground in Change Laboratory principles, and meetings of the program personnel and research team.

The university course introduced students to cultural historic views of learning. Through careful design, the course was saturated with tools and practices, forms of assistance, and opportunities to engage in meaningful and challenging learning activities. This environment sought to increase learning for all participants across institutional settings, exemplifying forms of expansive learning (Engeström, 2001). In essence, the university course introduced students to
tools and views of learning guided by activities that engaged their minds and connected them to each other, their communities, and the world around them (Vásquez, 2002).

*El Pueblo Mágico*, located in a local elementary school with a significant population of low-income and under-served students, served as a practicum site for undergraduates enrolled in the associated undergraduate course. *El Pueblo Mágico*, the after-school design experiment, brought university students and children together to jointly engage in gaming activities that promoted science, technology, engineering, and mathematics (STEM) related engagement and learning, notably computational thinking and health sciences—a community need identified by the elementary school’s administration.

*El Pueblo Mágico* provided a unique opportunity to understand undergraduate students’ learning, as this practicum site was organized around the same learning theory that was the object of study in the undergraduate course. Of relevance to the focus of my research, *El Pueblo Mágico* was organized around cultural historical theories of learning and development, in particular expansive learning—a view of learning that challenges a narrow focus on school-based disciplinary knowledge and argues that by understanding contradictions that occur between school-based and everyday knowledge, new types of knowledge are generated (Engeström & Sannino, 2010).

Such robust and complex views of learning have particular significance for youth from nondominant communities whose full repertoires of practice, I argue, are not fully leveraged or appreciated in formal learning environments, including prevalent intervention programs and more specifically precollege preparation programs. This study sought to understand *El Pueblo Mágico* and its practices in an effort to dissect a model that aims to reconceptualize students’
repertoires of practice (Gutiérrez & Rogoff, 2003), employ more expansive models of learning, and challenge deficit models of education.

As I will discuss in my methods section, the unit of observation was the larger ecology of *El Pueblo Mágico* (i.e., the course, practicum site, and research team); however, to better understand how everyday knowledge was leveraged and how beliefs and ideologies were made visible and addressed in this ecology, this study was guided by the following questions:

- What conceptions of learning do undergraduate students articulate? How do these change over time?
- What forms of mediation are available in the *El Pueblo Mágico* ecology for undergraduate learning? What do these forms of mediation look like?
CHAPTER II

UNDERSTANDING THE PROBLEM: “COMMON SENSE” ABOUT “INTELLIGENCE”

This chapter grapples with the categories of “intelligence,” “knowledge,” and “smartness” and the ways they intersect with the construct of race. To make explicit the complexity of these categories, I first explain how common sense notions are developed over time and influence our present and future through cultural mediation. I then retell the narrative of the growth of the U.S. school system at the beginning of the 20th century. I focus on the confounding factors of the exponential growth of the school system, the increased need for organization and efficiency, and the availability of IQ testing as a tool for placement. I argue that the critical intersections of these events helped foster a “common sense” view that worked toward promoting reductive notions of knowledge and learning and deficit perspectives of racialized groups of people. To end, I discuss the importance of developing models that work toward recognizing and challenging “common sense” in both research and practice—including teacher education and professional development for educators broadly defined.

Conceptualizing the Problem

Cultural Mediation

Cultural mediation brings to the fore the way our daily practices and institutional contexts are created socially and mediated through history (Wertsch & Toma, 1995), where culture is understood as our “social inheritance” (Cole, 1998, p. 291). This articulation of mediation is often traced back to Vygotsky (1978) who understood cultural mediation as a way to overcome the “split between the Cartesian individual and the untouchable societal structure” (Engeström, 2001, p. 134). In other words, cultural mediation fundamentally challenges the belief that individuals can be understood without considering their social and historical context. In his work, Vygotsky used a close-ended triangle (Triangle A in Figure 1 below) to visually present that the
movement from subject to object was not linear but instead influenced by artifacts, like language, contexts, and tools. The following image is adapted from Cole and Levintin (2000, p. 65).

Figure 1. Image of a close-ended and open-ended triangle to represent the dynamic nature of mediation.

Cole and Levintin (2000) elaborated on this image of a closed triangle by stating that it can be deceptive because it provides a static interpretation of “the image” or the current situation. The authors stated that cultural mediation is a dynamic process. To depict this more directly, they created an open-ended right corner of the triangle, where the bottom line is the phylogenetic (biological or evolutionary) line and the top half of the triangle is the cultural or mediated line.

As described above, history is central in understanding the current image, so the natural line actually consists of many levels of time. As described by Cole (1998):

Because cultural mediation is a process occurring over time, a CHAT perspective emphasizes that it must be studied over time. Time itself is conceived of with respect to four embedded domains: phylogenesis, the history of our species; cultural-history, the history of the cultural group into which we are born; ontogeny, the history of an individual human being; and microgenesis, moment-to-moment interactions that are the proximal locus of experience. An implication of this view is that all human beings are fundamentally hybrids of the phylogenetic and the cultural.

In this quote, Cole describes how the embedded domains of time make the context or image that is created dynamic.

Cole and Levintin (2009) argue that we can only understand the final “image,” or interpretation of our lives in that moment, through scaddadic-like eye movement, or back and
forth movement, from the natural line to the mediated line. It is with this understanding that the authors wrote, “With respect to both structure and content, from early infancy onward, human conscious is ‘de-formed’ by the need and ability to mediate actions, including the acts involved in comprehending what is going on, in and through culture” (p. 65). Cultural mediation then is a dynamic process that calls attention to the way that humans have organized structures and daily practices over time.

One way that culture and history are understood and carried into the present is through artifacts. Artifacts are the “constituents of culture . . . and materialize in the form of objects, words, rituals, and other cultural practices that mediate human life” (Cole, 1998, p. 292). Artifacts as conceived of through the theoretical lineage of Dewey, Marx, and Hegel, are “an aspect of the material world that has been modified over the history of its incorporation into goal-directed human action” (Cole, 2003, p. 117). With this understanding, a central characteristic is that artifacts are both material and ideational. They become ideal in the way that their material forms and functions have shifted and been reified through their participation in daily practices and the way that value and ideation mediate the present (Cole, 2003). Inherent in this understanding of cultural mediation is the recognition that within every experience, both affordances and constraints exist. A cup, for example, is both material and ideational because it can have different values—a crystal cup may be understood as more valuable than a disposable cup—despite their ability to function and hold water equally. In the next section, I describe the way individuals may come to understand the material and ideational functions of artifacts through the socially grounded theory of learning, also known as higher psychological functions.
Higher Psychological Functions

As described by Wertsch and Toma (1995), cultural mediation emphasizes that the “mental functioning is assumed to be inherently situated in regard to cultural, historical and institutional contexts” (p. 159). In other words, learning is an ongoing process that leads to the co-construction of knowledge as first occurring on the social plane (Cole & Griffin, 1983; Vygotsky, 1978). Thus, learning necessarily needs to be defined as a socially mediated process where ideas, knowledge, and ideologies are not born out of the individual but exist socially first and then are adopted and adapted by the individual over time. This social process of learning is central to understanding the role of artifacts that are carried into the present and assigned value through history (Cole, 2003).

Vygotsky (1978) described that learning cannot simply be passed down from an adult to a child. A child, through her interaction with society (social plane) will make meaning of external objects using her own concepts and definitions (individual plane). To explain the process of development I return to the example of a cup, and more specifically, how a child learns the meaning of “cup.” This process of learning is what Vygotsky termed higher psychological functions and includes three simultaneous processes.

- Every function in the child’s cultural development occurs first on the social level, before it can occur on the individual level.
- To internalize an external operation, its meaning must be reconstructed by the individual.
- The process of transformation from the social plane (level) to the individual level occurs over a long series of developmental events.

To make these processes more concrete, I explain how they occur simultaneously as a child learns to make meaning of “cup.” First, in order for a child to learn about a cup, she has to see
adults talk about and/or use a cup. This interaction between adults constitutes the social plane, the first process. When the child observes the uses of this object (cup) she can begin to reconstruct the meaning of cup, such as an empty container that holds liquid. Each individual has a unique reconstruction or definition of a cup. Then, the child will start to fine-tune her definition of a cup through exposure to a series of developmental events, the third process. It is in this way that the child will be able to differentiate a cup from a bowl. The child’s initial conception of cup might be an empty container that holds liquid; however, she may alter her definition when she learns that a bowl, which can also hold liquid, may be a little bit bigger and deeper. She may learn that cups are always glass or sometimes pink. Her intrapersonal image of a cup depends on her exposure to the social plane, but because of the constant interaction between the social and individual level, learning and development are always dynamic.

As described above, a child’s intrapersonal image of a cup depends on that child’s exposure to the social plane and the cultural practices of the community to which the child belongs. In this example, the cup is material, but over time, the same child may begin to assign perceived value to different forms of the cup. I say perceived because, for example, she may learn that crystal glasses have a higher social value than other cups, and these should be used for company. However, another family may value plastic cups more for their practical value and see crystal glass as an unsafe investment. Thus, understanding the ideational value of the cup is useful because it reminds us that artifacts gain their value in history, and values are socially and culturally co-constructed (Cole, 1998). This example reiterates the dual nature of artifacts as material and ideational.

In reflecting upon cultural mediation, specifically as discussed by Cole and Levintin (2000) and Vygotsky’s (1978) notion of higher psychological functions, I found a lens through
which to interpret the social construction of power and positioning, including for issues of race. As described above in Cole and Levintin’s adaptation of the triangle, the “natural line” could be the location of skin pigmentation. The development of the IQ test, the “mediational line” is an example of the way an artifact has been used to create perception of the educability of people of color. The legacy of these tests, I argue below, is still present and exemplified in the language (also an artifact) of the “achievement gap” as it still has a legacy that nondominant populations are lacking academic preparation in comparison to their White peers.

**Cultural Historical Perspective of Common Sense: Intelligence and Race**

**Brief History**

It is important to note that laws, tests, policies, and structures are also mediated artifacts that are both material and ideational. For example, ideas, laws, and actions establishing the “educability” of nondominant students have a long history, predating the large, industrialized school structure (Anderson, 1988; Haney-Lopez, 2003). Specifically, laws, such as compulsory ignorance laws–laws that made it illegal to teach Blacks how to read–as well as de jure and de facto segregation are examples of the ways deficit thinking has become part of macro and micro level educational policies and laws (Valencia, 2010). Such actions were “justified” in many ways including the use of *pseudoscience* or the “false persuasion by a scientific pretense” (Blum, 1978, p. 12). IQ testing is a powerful example of pseudoscience (Gould, 1981; Selden, 2002; Valencia & Suzuki, 2001). To understand the influence of IQ tests (artifacts) on the educational system, I want to highlight two central factors.

First, at the turn of the century, school systems were experiencing massive growth. This was due to large movements into cities from rural towns, increases in immigration, and laws mandating school for youth as well as funding being tied to attendance (Tyack, 1974). For
example, from 1890 to 1918, there was an increase in high school attendance by 711%, despite only a 68% growth in the overall population. This tremendous growth in size created a need to create processes for organizing the school system and increasing efficiency to maximize use of resources (Tyack, 1974).

Second, at the turn of the century, there was an active eugenics movement. This movement was comprised of prominent leaders from multiple disciplines who had the goal of “cleansing the American blood” by getting rid of people of color. Techniques included sterilization, marketing campaigns, and most relevant was the rationalization of an intellectual hierarchy through IQ tests (Selden, 1999). Intelligence at this time was being promoted as a genetic trait, and one that was not as prominent in “Blacks or those of Latin Stock” (Seldon, 1999). Such IQ tests were culturally biased and included questions about, for example, the World Series. Of import, the idea that tests can be “culture-free,” is an impossibility from a cultural historical perspective, yet the widespread (and false) assumption about the neutral nature of IQ tests ultimately influenced the structure of the U.S. school system (Cole, n.d.).

World War I presented an opportunity to experiment with IQ testing on a large scale. Despite flawed methodology (Gould, 1981), high scores on IQ tests were found to be positively correlated with high military status. As a result, it was determined that the tests could also be used as predictors of performance and eventual career trajectories (Tyack, 1974). The tests were soon adapted for schools and used as a way to help create efficiency in the school system. Students were tested and placed on appropriate career trajectories. The tests were introduced to schools in 1921, and by the end of 1926, 37 out of 40 cities with a population of over 100,000 people were using the tests to (a) classify students into homogenous groupings, (b) supplement teachers’ estimates on student ability, and (c) diagnose the cause of student failure (Tyack 1974).
In understanding schools as mediated structures and tests as artifacts, we can see the way that the predecessor of the current school system was designed to, for the most part, create different “tracks” based on biased and static understandings of intelligence, of which lower tracks were overwhelmingly comprised of Latino and African American youth. Ironically, and yet purposefully, the intelligence tests results “discovered” the need for “special curriculum” for nondominant youth. One form of this curriculum included vocational programs. As reported by Tyack (1974), one of the towns that administered IQ tests concluded that the “children of immigrants constitute 63 percent of the pupils on the slow track” (p. 199).

Terman (1916), a Stanford University professor and eugenicist, wrote the following on the low educability of American Indian, Mexican American, and African American children:

And yet, as far as intelligence is concerned, the tests have told the truth. These boys are uneducable beyond the merest rudiments of training. . . . Their dullness seems to be racial, or at least in the family stocks from which they come. . . . Children of this group should be segregated in special classes and be given instruction which is concrete and practical. They cannot master abstractions, but they can often be made efficient workers, able to look out for themselves. (as cited in Valencia, 2011)

In this excerpt, it becomes evident that the tests were ideational—and were reifying the educability of students based on not intelligence but what could be discerned form the “natural line”—ethnicity and pigmentation of skin color. Further, IQ tests and their interpretations perpetuated the idea that intelligence was located in the individual or as part of the family upbringing. However, as described by Tyack (1974), one of the most important implications of IQ tests was as follows:

But perhaps the most significant result of the testing movement was that the notion of great and measurable differenced in intellectual capacity became part of the conventional wisdom not only of school people but of the public—a development so pervasive in its influence that it is exceedingly difficult to perceive today how people conceived of differences in cognitive performance before scientists taught us to think of this function as “intelligence.”
Here, Tyack captures the legacy of IQ testing. It was created, marketed, and included into a school system that at the time was growing at exponential rates and needed organization. The tests became so pervasive and so widely used that, as Tyack (1974) described, it can be hard to think of what intelligence would look like without a score on a test. In the cultural historical view, the artifact—the test—had a history that facilitated our understanding of categories such as: intelligent and not intelligent. IQ tests reinforced that intelligence was a static notion that could be, or not be, achieved. Further, these tests moved to privilege certain kinds of knowledge over others. As discussed by Tuomi-Gröhn, Engeström, and Young (2005), this school-based knowledge, characterized by distinct “stages” or “levels” of a particular notion of a skill or knowledge set, is often privileged.

It is also important to recognize that these ideas developed over the course of a long period of time. In the same way that the child learns the cup over time, students were exposed to tests, values, and ideas of being assigned labels, being placed in homogenous classrooms, and being told that there was a correct answer to problems for not only the duration of their educational experience but for generations of family members’ educational experiences. This social process occurred over a long period of time and became solidified over a “long series of developmental events” (Vygotsky, 1978).

The notion of common sense was notably elaborated by Gramsci (1999), whose work was concerned with the maintenance of power relations and the role of dominant ideologies in cultural hegemony. He discussed “common sense” as an “uncritical and largely unconscious way of perceiving and understanding the world that has become ‘common’ in any given epoch (p. 625). His argument about the role of common sense in maintaining the status quo and existing hierarchies contributed to our understanding of the consequence of allowing these ideologies to
remain unexamined and unquestioned. While Gramscian notions certainly informed my understandings, this dissertation drew primarily on the work of Haney-Lopez (2003) who linked common sense and race from a legal perspective. In this work, Haney-Lopez defined common sense as “standard responses that are consistently but thoughtlessly deployed quickly for routine functions, especially in highly organized settings” (p. 112). Taken together, these understandings point to the unconscious actions that are employed by individual actors—actions that are grounded in social contexts and mediated by dominant ideologies. From a cultural historical perspective, common sense, then, is culturally mediated. In other words, how or in what ways people develop common sense notions are mediated through their participation in practices and the tools (both ideational and material) therein. Unexamined, these beliefs become part of the everyday and are normalized over time.

The eugenics movement purposefully attempted to rationalize claims of White superiority in terms of race and static notions of intelligence. Over time, common sense was influenced to conflate race with intelligence. The manifestations of such ideas are not always easy to identify. It could be argued that the language of the “achievement gap,” or at least the assumptions behind it, can be traced, in part, to the hierarchy of intelligence by race as well as the focusing of the problem on the student or family and not in the structures of school.

By locating the problem in the student or community, a deficit perspective can surface in which the “blame the victim” logic can emerge (Valencia, 2011). According to Valencia, there is a logical pattern that is exhibited in locating the problem in the individual that helps make the link from the ideological foundation of deficit thinking to how it is translated into action. The rationale is as follows. First, a social problem is identified. In thinking back to the achievement gap, the social problem is the difference in test scores by racial category. The problem, however,
ignores mediated structures of schools, common sense understanding of tests, and narrow understandings of intelligence and knowledge. Second, a study is conducted to figure out “how the disadvantaged and advantaged are different” (Valencia, 2011, p. 9). Studies to figure out the reason for the achievement gap have pointed to, for example, students’ of color “lack” of cultural capital, academic preparedness, and motivation. The next step is to identify the differences as the impetus of the social problem. Last, there is an intervention that is created to help correct the differences, or deficiencies. Let us consider the example of remedial programs, which allegedly help nondominant students “catch up” to their White counterparts—through, for example, pull-out programs (Gutiérrez, Hunter, & Arzubiaga, 2009).

This logic seems like a rational response; however, the focus remains on the individual, not on the history and structures that have created a social pattern of, for example, educational underrepresentation. Similar arguments, of the pervasiveness of the deficit perspective, or the focus on fixing the individual have been made about non-school-based educational structures, like precollege programs (e.g., Gildersleeve, 2010; Yosso, 2006). I highlight this because I argue that in thinking about access to education, it is important to think of educators broadly to include teachers, school counselors, precollege counselors, and administrators, as this history is shared across many groups, and the focus on the individual is pervasive in multiple settings.

In understanding language as an artifact, I provide the example of the “achievement gap” as a way to highlight the way that language can re-inscribe the sum of the history of intelligence, or more explicitly, who is able to learn. In her 2005 AERA presidential address, Ladson-Billings discussed the achievement gap, what she described as “One of the most common phrases in today’s education literature” (p. 3). She used the National Governors’ Association meeting to call attention to the achievement gap:
A matter of race and class. Across the U.S., a gap in academic achievement persists between minority and disadvantaged students and their white counterparts. This is one of the most pressing education-policy challenges that states currently face. (2005, p. 3)

Ladson-Billings (2006) posited that a more accurate representation of the achievement gap was the idea of an “educational debt.” She discussed that the debt could be explained in multiple forms including (a) historical debt, the history of treatment of individuals from non-dominant communities, including slavery; (b) economic debt, including the inequity of school funding; (c) sociopolitical debt, the limited access to civic participation, including the right to vote and limited legislative representation; and (d) moral debt, which she described as the social responsibility to acknowledge groups of individuals who have sacrificed to build the nation.

In understanding the significance of reframing the “achievement gap” into an “educational debt,” it is important to remember language is a meditational tool (Vygotsky, 1978) that is also ideational. The wording of the achievement gap brings to the fore that Latin@ students and African American students are lagging behind their White counterparts. From this standpoint, the educator should help the students “catch up” to the ability of the White students. In the reframing into “educational debt,” the terminology demonstrates the history and systemic nature of inequity that has shaped the “achievement gap,” thus including the educational structures as a necessary part of the equation that must also be addressed.

Centralizing the concept of cultural mediation shifts the location of knowledge, and failure to attain knowledge, as being located solely or primarily in the individual to knowledge as being shaped in and through culture (Cole & Levintin, 2000). From this perspective, notions of power and privilege are necessary points of consideration to understanding learning and the development of learning. Ladson-Billings’s (2006) reframing is powerful because it identifies the
embedded values in the language of the “achievement gap,” which are socially constructed, and offers a new way of seeing the phenomenon in her move to call it an “educational debt.”

In the next section, I highlight two concepts, foregrounding values (O’Connor & Penuel, 2010) and natural history analysis (McDermott & Raley, 2010), which call for more analysis in the vein of Ladson-Billings’s reframing, and promote the need for reflective practices to make values and ideological concepts in schooling explicit.

**Schools as Sites for the Production of Common Sense**

In a cultural historic view, schools can be understood as mediated systems, with both material and ideological values embedded in their structures that are in turn indexed in daily practices (Freire, 1970; Moll, 1998). Understanding schools as mediated structures provides the ability to reframe interactions between people as actually interactions between their histories and the structures in which they have grown up (Bourdieu, 1977; O’Connor & Penuel, 2010). Moll (1998), for example, argues that schools are sociopolitical sites influenced by a range of social factors. He writes:

> Schools can be thought of as socially created settings to make broadly available important resources of the culture, especially those than can mediate our thinking in powerful ways, such as literacy and mathematics. Perhaps for this reason, as critical theorists have claimed for a long time, schools are never neutral settings, they are political sites, for what they do is always mediated by broader structural factors, and their social practices carry plenty of ideological baggage. (p. 5)

Here, Moll highlights the embedded nature of values and ideologies in schools. In short, schools and institutions promote certain ideologies, both about people and knowledge, that need to be made explicit in order to make meaningful systemic change. For example, our definitions of intelligence and what counts as intelligence are sculpted by history—and influenced by the groups that had influence over the structures—and artifacts—including tests and measurements of intelligence. In addition, definitions of what it means to be a teacher are also present.
This argument to acknowledge these embedded values has been made explicit by O’Connor and Penuel (2010), through what they call the need to foreground values. In essence, foregrounding values brings to the fore that human beings—and thus the systems that are created by humans—have both implicit and explicit values embedded in social practices and institutions. Values are defined as “subjectively experienced qualities of a process, an outcome, event, tool, or the like that make it important for a person, group, family, or community in relation to action” (O’Connor & Penuel, 2010, p. 3). Of import, the authors write that values and social practices in school can influence the “different potential trajectories or social futures for the person, trajectories that define what it means to succeed or fail in school” (O’Connor & Penuel, 2010, p. 4).

O’Connor and Penuel (2010) argue that it is import to make values explicit in research and discussion about schools; through this approach, the implicit values can be discussed and negotiated and work can be done toward teloi, the ideal goal or endpoint. In essence, making the goal of education explicit allows educators and researchers to discuss and negotiate embedded values and the way they may influence how a student is perceived, and in turn, influence the student’s academic trajectory. A discussion of embedded values creates the need for reflective practices to occur in order for them to be identified.

Similarly, McDermott and Raley (2010) discuss the need for an approach that allows for “new ways of seeing” (p. 388). Borrowing from Bateson (1936) and Emerson (1871), they use the term natural history analysis as a new way of understanding or seeing in analysis. As a preamble to this concept, I first want to retell one of the narratives from the article.

McDermott and Raley (2010) tell a narrative about Alexis—a predominantly Spanish-speaking kindergartener—who manages to read a particular list of words in English and is
congratulated and praised by teacher for doing so. The authors then retell the story to include the way that Giordano, a fellow classmate, actually helped Alexis read the words out loud. He helped Alexis by reading Alexis’s list of words backwards through the paper she was holding. Another student, Jared, declared that he could read the words too, yet he did not receive attention from the teacher. Despite the efforts of both Giordano and Jared, the official narrative was that Alexis accomplished reading the list *solita* (by herself), and this claim was acknowledged by Alexis and the teacher.

This narrative is one experience in the students’ lives, but as McDermott and Raley (2010) posited:

> In the 22 seconds that follow Alexis’ receipt of the list, we can see a version of the story that will get replayed over the next two and a half minutes, and likely over the next 12 or more years of schooling. For Alexis to “read it” means that she must do it alone and in a way that the teacher any teacher can see it. (p. 382)

The last sentence of this quote highlights the way values come into our daily practices. Reading, whether or not it was actually done, was an action of saying the words when the teacher was paying attention. Similarly, Giordano, who was able to read the words backwards, was not recognized as being able to read.

The previous examples show how a student comes to learn the meaning of a cup, or what it means to be able to read. Each of these interactions are small events—like the use of a cup or “the 22 seconds” it took for this interaction to occur—however, because these events occur in various forms over time a child learns to differentiate between a cup and a bowl, and a student can come to understand that learning is a individual process. Over time, we come to understand and assign values and ways of viewing the world or frames. These worldviews based on our experiences in turn influence the way we make sense of our world (Goffman, 1986). Diaz and Flores (2001) have similarly described these frames as habitudes that influence the way we
organize a classroom. In essence, through our daily participation in society and structures, including schools, we come to make sense of and define words and ideas—most of the time this becomes our “common sense” (Gramsci, 1999; Haney-Lopez, 2003) understanding. The notions of “frames,” “habitudes,” and “common sense” represent different terms that together highlight the social construction of learning and how all of our experiences are mediated (Bourdieu, 1977; Goffman, 1986; Gramsci, 1999). These concepts emphasize the need for reflective practices, practices that help make us aware of our own assumptions and provide a new lens, theoretical or otherwise, needed for social change.

**Challenging “Common Sense”**

McDermott and Raley (2010) write that a natural history analysis includes stating a problem, making a claim, and then finding a better way to proceed. The problem, the authors write, is that the world is not easily looked at in new ways. The problem is that categories are developed and shaped by history, and “we have identified . . . that language is a great invention for helping people recreate yesterday’s world today, but a biased resource for making today and tomorrow different from today” (p. 387). The claim, the authors describe, is that the world is available and more malleable; however, “inattention to intelligence of people is so institutionalized that it now takes hard work to uncover it” and the promise hinges on looking slowly and carefully at peoples’ activities. If we can stop overriding each other with privileged categories, we might instead see accomplishments, critiques and frustrations when others see only disorder and stupidity. The complexities of the world are more available—not easily available. But more so—to those willing to look again and again at the varied ways people put their lives together. (p. 375)

Here, through the articulation of the problem, the claim, and the promise, McDermott and Raley (2010) write about understanding histories and ways of seeing and identifying the promise in new ways of knowing. Such an action, the reimagining of an artifact, like language, is a powerful
tool to creating change in the world. In the example above, the child moved from not knowing how to read, to being creative, ingenious and able to read. Reframing is a powerful way of observing. However, I also want to point to the last sentence of the quote above, “the complexities of the world are more available—not easily available . . . to those willing to look again and again . . .” (p. 375).

I agree with McDermott and Raley (2010) that such a way of seeing is powerful, yet difficult and requires work. However, I argue that such a practice requires more than being “willing.” One has to be both willing and trained. It requires a repertoire of practice to learn how to frame and reframe what we are seeing and to foreground values as discussed previously. This practice is one that is largely discussed by researchers and those of us trained to conduct analysis; however, there is a need to incorporate the knowledge of how to reframe into the practices of education practitioners. Such practices have been incorporated into teacher education through, for example, theories of meta-cognition and self-awareness (e.g., Borkowski & Muthukrishna, 1992). Yet, there is room for growth in the literature to discuss how to organize for praxis, reflection, and action that are created with an equity-oriented agenda (Freire, 1970; Gutiérrez & Vossoughi, 2010). In the following chapter, I discuss one model of intervention, a social design experiment that promotes transformative education, a new way of seeing, for both practitioners and researchers.
CHAPTER III

DISRUPTING COMMON SENSE: WHY SOCIAL DESIGN EXPERIMENTS

Social design experiments are grounded in a cultural historical activity theory perspective, which will be elaborated on below. A social design experiment necessarily includes purposeful and intentional as well as dynamic planning of the learning environment to promote equity in education, in particular for nondominant students. Gutiérrez and Vossoughi (2010) propose social design experiments as a collaborative model, grounded in the concept of re-mediation, robust notions of culture and learning, and an equity-oriented and transformative agenda. A social design experiment seeks to create and study change. Of significance, social design experiments are grounded in cultural historical understanding of learning and development, and in particular, expansive understandings of learning and mediated praxis.

Cultural Historical Activity Theory

Cultural historical activity theory (CHAT) is a complex, dynamic, and inherently multidisciplinary theory that creates a dialogue between the past, present, and future as well as between theory and practice (Sannino, Daniels, & Gutiérrez, 2009). CHAT was founded on the work of Russian scholars like Leteno’v, Vygotsky, Luria, and Davydov. A unifying theme that runs through these scholars’ work is the understanding that activity is the basic unit of human life (Sannino et al., 2009). In essence, humans learn in, and through, activity, and it is in, and through, activity that humans are able to learn and develop skills, personalities, and consciousness.

According to Engeström (2001), there are three generations of research in CHAT. The contribution of the first generation of CHAT was in developing a way to overcome the “split between the Cartesian individual and the untouchable societal structure” (Engeström, 2001, p. 134). This idea fundamentally challenged the belief that the individual could be understood
without the social and historical context. The second generation of CHAT, largely influenced through the work of Leont’ev, moved \textit{beyond individual action to understand collective activity}; thus the unit of analysis was the activity system itself. In other words, the focus on activity highlighted complex \textit{interactions} between the individual subject and the larger community. In addition, through the work of Ll’enkov, \textit{contradictions} were reconceptualized as the impetus for change (Engeström, 2001). This reframing promoted the monism of \textit{theory and practice}, reflective of Marx’s influence “where theory is not only supposed to analyze and explain the world, but also facilitate practices and promote change” (Sannino et al., 2009, p. 3). In addition, it promoted a \textit{futuristic orientation} where change was seen as \textit{grounded in history} and providing opportunities for new ways of thinking and being. This understanding of contradictions as a potentially positive experience helped me frame and articulate the dynamic nature of El Pueblo Mágico as a model adjusting to local needs of the community and university.

The third generation of CHAT has been largely influenced by the work of Yrjo Engeström with particular contribution from Mike Cole in terms of theorizing and promoting \textit{complex notions of cultural diversity} (Engeström, 2001, p. 135). This has involved paying particular attention to multiple perspectives, boundary-crossing (attention to more than one activity system), and expansive learning where both vertical and horizontal knowledge work to create a new knowledge (Engeström, 2001); both boundary crossing and expansive learning aided in my articulation and conceptualization of knowledge and learning.

Above are assumptions that are embedded in a CHAT perspective of learning. Expansive learning, again a central influence on social design experiments, is born out of this lens.
Expansive Notions of Learning

In the following section I highlight three underappreciated principles of learning discussed by Cole and Gajdamashko (2009) as a way to highlight and define expansive notions of learning as well as provide affordances of this view for the learning environment. The three principles are (a) the double-sided nature of development, (b) development as a collective transformation, and (c) development as both horizontal and vertical movement.

Double-Sided nature of learning. The double-sided nature of learning is both an acquisition of new knowledge (or movement toward mastery), as well as the disruption of old knowledge (Cole & Gajdamashko, 2009). Engeström (2006) discusses this idea of “breaking away” and “opening up.” He describes three layers of agency that promote this view of learning. The first layer is the interpretive layer where the activity abides by the norms and rules. He discusses this as a causal “if, then” scenario where ideas and actions follow a logical—or perhaps “common sense”—pattern. The second layer is the contradictory layer. Contradictions enter into every activity system and “are not the same as problems or conflicts.” Instead, “contradictions are historically accumulating structural tensions within and between activity systems” (Engeström, 2006, p. 27).

In this view, contradictions are sources for sense making and give way to the third layer, the agentic layer, where “contradictions generate disturbances and conflicts but also innovative attempts to change the activity, making the zone of proximal development an invisible battleground” (Engeström, 2006, p. 28). Through the contradictions, the tension is resolved by “constructing a new mediating instrument.” I argue, that language is one potential mediating instrument. In other words the new instrument that is developed to navigate the contradiction can be a new vocabulary, or way of talking, and thus thinking about groups of people and practices
in a new way. This new development is a break away “from a constraining rule, limiting boundary or constraining relationship,” and a move toward a new way of talking and seeing (Engeström, 2006, p. 29).

In understanding the double-sided nature of learning and development, the old knowledge could be a conflation of culture, race, ethnicity, and diversity. Often such conflation of these categories imposes static, uncomplicated, and problematic depictions of nondominant populations (Gutiérrez, Paguyo, & Mendoza, 2012). Through a contradiction, culture can be viewed as a set of practices shared among individuals with a common group membership, a notion that simultaneously captures the asymmetries, variances, and regularities by which communities organize and participate in cultural practices. This is important for two reasons. First, it gives way for a more animated understanding and complex perspective of culture, one that highlights “the varied ways people participate in their community’s valued activities” (Gutiérrez & Rogoff, 2003, p. 21). For example, understanding cultural practices challenges attaching attributes of risk to students based upon phenotype, assumptions about culture and race, behavior, and school records. Second, a more robust notion of cultural practices allows for a greater set of diverse repertoires of practice to be included in the classroom. Heterogeneity in classrooms has been harnessed as an organizing principle in the design of learning environments that attempt to leverage students’ horizontal or everyday expertise. Drawing on diversity as a resource, including race, language, grade, gender, as well as varying degrees of familiarity and expertise with different academic practices and disciplines, contributes to the co-construction of a rich learning environment (Gutiérrez, 2008). Scholars also have utilized the concepts of cultural wealth (Solórzano, Villalpando, & Oseguera, 2005; Yosso, 2006), funds of knowledge (Gonzalez, Moll, & Amanti, 2005) and repertoires of practice (Gutiérrez & Rogoff, 2003) to
privilege and emphasize sources of knowledge and expertise developed in people’s daily rounds—knowledge not often valued in the educational policy and practice or theories of learning and development. Rather than organizing around deficit perspectives or binary views of formal and informal learning, school and home, and everyday knowledge and school-based knowledge, these concepts are constitutive of dynamic notions of culture and understandings that consider the importance of practical or everyday activity in learning (Engeström & Sannino, 2010; Gutiérrez, 2008). In sum, to move away and challenge the deficit perspective, contradictions are necessary because they permit the movement from static notions of culture, race, and the educability of racilized groups and allow for the break away toward more robust understandings of cultural practices, heterogeneity, and expansive ways of knowing.

Collective transformation. The second principle of learning identified by Cole and Gajdamashko (2009) is “development as a ‘collective transformation’ in learning (p. 134). The authors point to Rogoff’s (1997, 2003) definition of development as a process and involves peoples as changing in participation over time and their contributions also change the practice as “at the same time that they inherit practices invented by others” (p. 52). In understanding that learning is not located in the individual, but in the social organization of learning, social design experiments emphasize the re-mediation of the learning environment. Re-mediation is a central component of social design experiments.

The move from remediation to re-mediation is more than just a play on words (Cole & Griffin, 1983). A central tenant of remedial education is that the student is the source of the change. As such, it can be argued that remedial education reinscribes the deficit perspective that a student is lacking something and that if the student can be fixed then the problem will go away. Remedial education is intended to supplement instruction, and four basic structures used to do
this include (a) pull-out programs where students get help outside of traditional, or normal, classes, (b) add-ons where students are engaged in additional classes before or after school, (c) in-class support in which students receive assistance during their course, and (d) replacement where mainstream classes are replaced by remedial classes (Ascher, 1996; Gutiérrez et al., 2009).

The focus on individual learning and development can have a narrow view “about the ways in which individual and collective change are intimately connected” (Cole & Gajdamashko, 2009, p. 139). Thus, understanding learning as both an individual and collective transformation of social organization, makes learning central in organizing the learning environment.

The notion of re-mediation is one way to think about the social organization of a learning environment that promotes both individual and collective transformation. Re-meditational education is a cultural historical view of remediation in which particular attention is paid to the ways “mediating devices regulate coordination with the environment” (Cole & Griffin, 1983; Gutiérrez et al., 2009). This is a move from trying to repair the individual’s skill set to thinking about the re-organizing of systems and environments with a “conscious and strategic use of a range of theoretical material and tools” that promote learning and harness a student’s repertoire of practice and create an environment where everyone can be “smart” (Gutiérrez et al., 2009, p. 12).

**Vertical and horizontal learning.** The third principle of learning discussed by Cole and Gajdamashko (2009) is the vertical and horizontal dimension of development. Vertical development is most often found in schools and is characterized by distinct “stages” or “levels” of a particular notion of a skill or knowledge set, often organized hierarchically (Tuomi-Gröhn et al., 2005). Although vertical knowledge is important to think about when organizing, a sole focus on this narrow view of what and who is counted as able to learn can foster inequities in thinking
about who is smart. Further, the incorporation of horizontal—everyday knowledge—and vertical knowledge can lead to expansive learning that fosters contradictions that produce “a radically new, wider, and more complex object and concept for their activity” (Engeström & Sannino, 2010, p.1).

Engeström (1996) writes that vertical development “requires closed boundaries, [the] elimination of horizontal movement across social worlds” (p. 129). He continues by writing that the challenge then is to “account for such processes of boundary crossing” (p. 130). Boundary crossing—the movement between activity systems—fosters opportunities to engage with old knowledge in a new way, which requires “significant cognitive retooling” (Tuomi-Gröhn, Engeström, & Young, 2003, p. 4). The conceptualization of movement as learning establishes a new understanding of transfer that is more traditional in the learning sciences. As stated by Tuomi-Gröhn et al. (2003), “situated cognition theorists view the research base of classical psychology as invalid and culturally decontextualized, and its implications for schooling are seen as narrow at best, and inequitable at worst” (p. 2). More specifically, dominant approaches to cognition privilege vertical school-based expertise that often has stages and levels, and thus creating a singular model of what counts as expert. The inequities arise in the narrow view of what and who can be counted and valued as smart. In this vein, social design experiments have a minimum of two activity systems (Gutiérrez & Vossoughi, 2010).

**Mediated Praxis**

As described in the overview of CHAT, a central underlying principle is the work toward a monism in theory and practice. This unification is important because either one alone will not foster change (Engeström, 2001; Freire, 1970). To create futuristic change both theory (a way to engage in reflection) and practice (a way to engage in action) are necessary.
Mediated praxis is the organization of the learning environment to develop a consciousness “of the theory-driven nature of practice, [to] become more deliberate in our use of theory as a tool for organization, decision making, and reflection” (Gutiérrez & Vossoughi, 2010, p.104). Praxis, in its simplest form, is reflection and action. This concept is often associated with Freire (1970) and the lineage of critical pedagogy (e.g., Giroux, 2003; hooks, 1994; McLaren, 1998). Mediated praxis, takes this concept one step further, and as called for by Freire (2005), unites critical pedagogy with theories of human development and learning to create a transformative learning environment and promote an equity oriented agenda (Gutierrez & Vossoughi, 2010). In essence, mediated praxis brings in robust notions of learning theory to think about how to create an intentional and purposeful design of a learning environment to foster and promote praxis. The following excerpt makes evident the intentionality of the movement across learning environments:

> Simply moving between shop floor and an empty laboratory space or university classroom and school site may not facilitate the kind of deep reflection necessary for creating equity-oriented and meaningful change in work and educational environments. Rather, it is the artifact-rich environment—the material, conceptual, and human tools made available for and constructed within the laboratory—that mediates the process of reflection and action [emphasis added]. (Gutierrez & Vossoughi, 2010)

Understanding more deeply how the learning environment is intentionally and purposefully planned to support undergraduates moves toward reflection and action, new ways of seeing and doing, is a central part of my study. In sum, the move toward social design experiments is ground in mediated praxis and organized around expansive notions of learning. Although the impetus for social design experiments has its origins in interventionist college programs for students from nondominant communities (Gutierrez et al., 2009), I provide an overview of the Fifth Dimension model, around which social design experiments were elaborated.
The Fifth Dimension Model

Mike Cole and Peg Griffith are credited with the establishment of the Fifth Dimension model in the late 1980s (Cole, 2006). The intention was to create a model of learning that systematically studied social and intellectual development and provided an educationally rich learning environment for children during after-school hours. Explicit goals involved (a) including computer technologies into the learning environment “to invite the inclusion of girls and minorities into the program;” (b) providing a rich educational setting for children during after-school hours; (c) creating a structure for interactions that promote cultural, economic, religious and age diversity; (d) creating a program that is mutually beneficial to community and university; and (e) developing such partnerships to be sustained over time” (Cole, 2006, p. 5).

Lucy Friedman (2006), President of the After-School Corporation—an organization that “strives to increase the quality of afterschool programs with the goal of making programs public responsible and universally available and sustainable”—discussed the contributions that the Fifth Dimension model has made to after-school programs. She writes “the Distributed Literacy Consortium (DLC) initiative in which undergraduates staff after-school programs for elementary school kids has broadened our perspective on the possibilities for enriching kids lives” (Friedman, 2006, p. xiii). The Fifth Dimension brought informal learning to the emerging field of after-school programs and worked to unite theory and practice through leveraging community and university resources. Through the creation of partnerships, the university benefits because they are providing their students with a quality practicum site “where they are engaged with the material” they are learning at site. It provides a benefit for the community and in particular the elementary students who are engaged, through play, in activities that involve problem solving and critical thinking. This partnership also allows for sustainability in terms of resources (e.g.,
staff in the form of undergraduate students, and practicum site) but also in terms of funding (Cole et al., 2006).

Since the first program over 20 years ago, the Fifth Dimension model has been adapted, studied, and redesigned across the country and internationally. The sustainability of projects in local communities is dependent on adaptations of the model to fit community and institutional needs. One such feature that facilitates adaptation is the multisited nature of the Fifth Dimension program. Yet, every local adaptation maintains core components of the prototype that include common features of multiple activity systems: the after-school program, as well as the university course. I discuss the component parts of the ecology next.

**Undergraduate Course**

The program is built upon university-school collaboration and comprised of an undergraduate course that centers on cultural historical theories of learning and connects undergraduate understanding to practice through a practicum at a technology-saturated elementary after-school program. Although all Fifth Dimension courses are implemented in a slightly different manner, they each have the following set of core activities for the undergraduates (Cole et al., 2006):

- Campus course devoted to lecture, reading, presentations, and discussion to make connections relating the after-school site to the undergraduate classroom.
- Undergraduate participation in the designated Fifth Dimension site at least one to two times a week.
- Undergraduates write detailed field notes on interactions and observations at the practicum site.
• The undergraduate course culminates in a research paper based on the experiences at the practicum site and connections to the course readings.

One example of the variation found across Fifth Dimension programs is the role of the field notes in learning activities. At Las Redes, the site at the University of California-Los Angeles (UCLA)—which El Pueblo Mágico is modeled after—the field notes are called cognitive ethnographies (CEs). The cognitive ethnographies have multiple roles. First, they serve to document moment-to-moment learning of the elementary students, undergraduate learning as well as their joint activity. Second, CEs are structured to help undergraduates make sense of the connection between theory and practice. Last, they serve to document shifts in understanding of concepts for the undergraduates. As Gutierrez and Vossoughi (2010) wrote:

The cognitive ethnography, a central tool in our work with novice teachers, becomes a site for sense making, synthesis, reflection and mediated praxis and helps to refute long-held dichotomies often taken up in teacher education: theory/practice, university/community and researcher/practitioner. Furthermore, working to generate a conceptual vocabulary for pedagogical practice allows us to name, recognize and therefore make conscious decisions about the moment-to-moment organization of learning. In this way we make theory a powerful tool for practice rather than assuming it to be so. (p. 61)

The CEs are a powerful tool to have students rupture dichotomies as well as understand moment-to-moment learning that is occurring and make sense of it through the theories that are being taught in the course.

Despite the variety in the implementation process, consistency of across many sites has been a shift in undergraduate perceptions of learning. For example, at Appalachian State University, 70% of class participants at pre-test defined learning as a “passive form of knowledge absorption” while 94% of the participants at post-test stated that learning was a socially constructed process, which required active participation (Cole et al., 2006, p. 134). Another construct that was measured was the perception of the students. On the pre-survey, 90%
of the undergraduates believed that failure to learn was due to a deficit of the student. On the post-survey, undergraduates understood “attention as task-dependent” (Cole et al., 2006, p. 134). Another study at the University of California at San Diego reviewed field notes from the 2001 winter and spring quarter and found 88% and 64%, respectively, of the students started to “spontaneously” use concepts in the class to explain their experiences in class (p. 138). A study at Whittier College demonstrated that students who were engaged in the course and the practicum site incorporated the theories into their interactions with the elementary students in terms of use of engagement as well as guided participation. Similarly, at Las Redes, another study demonstrated undergraduates’ development in understanding different forms of mediation, including a distinction between serial instruction—a more narrow step-by-step instruction—to mediational serial—which provides “just enough” assistance for a student to complete the task (Stone & Gutiérrez, 2007). These are all examples of the shifts in undergraduate thinking toward learning and interactions with students stemming from engagement in the Fifth Dimension Model.

**After-School Program**

The afterschool program is designed around the same cultural historical theories of learning that are discussed in the university class (Cole et al., 2006). It also serves as both an after-school program where elementary students learn and a practicum site where undergraduates are able to play with, think about, and enact the theories they are learning. Of import, the after-school program is built on incorporating and building on diversity (Cole, 1998). Mediating artifacts that facilitate learning through play across most of the Fifth Dimension sites include the following mediational tools.
• A maze that depicts all of the games available at the site that allows students to imagine that they are traveling to find adventures.

• Adventure guides that have beginning, intermediate, and advanced levels to chart progress as well as help organize for learning.

• An “electronic figurehead” that prompts problem solving skills and critical thinking through email interactions (Cole et al., 2006)

• Each after-school program has a site coordinator(s) who greets participants as they arrive as well as supervises the various activities (Cole & Engeström, 2006).

Each of these tools are intended to organize learning through play, bring in students’ everyday knowledge, and create an environment where students are not able to fail (Cole et al., 2006). One way of creating this environment is through the use of hybrid practices. One example comes from the electronic figurehead, referred to at El Pueblo Mágico as El Maga—a magical wizard who lives in cyberspace and has weekly email exchanges with the students. El Maga is the resident multilingual wizard who is neither female nor male as promoted by the grammatically incorrect masculine and feminine pairing in Spanish. El Maga promotes literacy as well as problem solving as he/she encourages the students to write about activities they have engaged in at the site and to communicate their problem solving techniques in the games/activities (Gutiérrez, Bien, Selland, & Pierce, 2010).

Research Team

One of the components of this and other social design experiments that is under-examined is the implementation of program practices and the role of the research activity and its members. I believe, however, that more attention should be given to this component because it is important to understand the how of the implementation process in designing learning ecologies.
Cole and his colleagues (2006), in their overview of the implementation of the Fifth Dimension model, discuss the tension that arose between implementing logistics of the model and conducting simultaneous research. The discussion of tension is important for two reasons. First, it demonstrates that ongoing evaluation and research have been built into the prototype from its inception. Second, as Cole and his colleagues highlight, the evaluation of program development pushed their own thinking of evaluations on learning.

Since its inception, the Fifth Dimension had big goals of enhancing learning environments for children, as well as creating systemic change. However, Cole and his colleagues not only wanted to establish a prototype, they wanted to prove that it would be beneficial for children and their learning. As a result, the model was built with the understanding that they would administer pre- and post-tests to students in the program, as well as to a comparison group from nonparticipants in the same neighborhood and schools. The goal was to test the “educational gains” of the children throughout the semester. In addition to the quantitative data, the implementation staff was also expected to write extensive field notes. These first sets of methods for evaluation did not go as planned. As described by Cole et al. (2006), after the first year of implementation, they were unable to both implement and study the design put forth. However, of importance here is not that the methods were unsuccessful but that the Fifth Dimension from its inception conceptualized the model with built-in ongoing evaluation of both the model itself and children’s learning.

Of the four sites that were started in the initial project, only one survived—the one Boys and Girls Club adaptation. Not only was it able to survive, but it grow with support from the Boys and Girls Club in terms of staff. This site was also granted funding from the Mellon Foundation, which was interested in the potential of after-school programs and technology and
provided funding for the Fifth Dimension Distributed Literacy Consortium. With increased access to resources, the Fifth Dimension experienced a dramatic expansion in the form of increased numbers of participating institutions as well as “expanded resources to study more adequate ways to evaluate Fifth Dimension activity system in promotion children’s development” (Cole et al., 2006 p. 72).

With the goal of speaking with multiple audiences, individuals working in the model sought to use various strategies ranging from quasi-experiments to longitudinal ethnographic description to capture changes in participant participation. As a result, three teams were created:

1. A cognitive team that adopted an “experimental-psychological approach to create experimental and quasi-experimental evaluations of the programs impact on the academically relevant abilities” of the children.

2. A process evaluation team that adopted the ethnographic-anthropological perspective to document interactions that precluded children’s learning.

3. The language and culture team that was an interdisciplinary team with a shared interest in the “special issues of creating programs appropriate to the bilingual/bicultural populations at several of our sites.”

Ultimately, the third group was absorbed into the other two teams; however, I draw attention to the thought and effort of creating a “multidimensional, multiperson, multilevel approach” to evaluation (Cole et al., 2006). As stated by Cole et al. (2006), the model they used “could not solve all of the problems of evaluation. But such a broad approach does represent, we believe, an intelligent response to the difficult problems of program evaluation” (p. 73). Again, I point to the way evaluation has been at the heart of the model with the goal of developing
complex ways of creating and studying the model. As Cole and Engeström (2006) promoted, “practice is essential for testing and improving theory” (p. 484).

Other literature on the research team includes discussions about sustainability and processes that the research team has taken to forge collaborations (e.g., Nacon, 2004). Other authors have discussed the research teams role in the development of the elementary after-school programs (e.g., Cole, 2006; Cole & Engeström, 2009). However, few researchers have looked at the implementation of the model or at how learning was organized for undergraduate students. This was the question I wanted to learn more about during my study with El Pueblo Mágico, the local adaptation of the Fifth Dimension.
CHAPTER IV

METHODS

This dissertation grew from ideas that emerged during my time as a research assistant with El Pueblo Mágico. In Fall of 2011, I completed my pilot studies based upon data collection from Fall of 2010—the first semester I was a teaching assistant. Participating in the project facilitated opportunities for me to reach deeper understanding of the design undergirding El Pueblo Mágico. The practice of reflecting on my tensions and learning experiences created the foundation for my research questions:

- What conceptions of learning do undergraduate learners articulate about teaching, learning and culture? How do these conceptions change over time?
- What forms of mediation are available in the El Pueblo Mágico ecology for undergraduate learning? What do these forms of mediation look like?

My goal was to understand more deeply the way a social design experiment engages reflective practices and fosters “new ways of seeing” (McDermott & Raley, 2010). A related goal was to identify design principles that would be applicable to additional types of learning ecologies, such as college access and retention. In this chapter, I provide an overview of the pilot studies, methods, and approach to analysis that helped me understand the how and the why of the practices instantiated in the design of El Pueblo Mágico.

Pilot Studies

The questions and claims in this dissertation were informed by two pilot studies I carried out in 2011. In the first study, I analyzed parallel learning process between an undergraduate and myself, resulting in a conference presentation. In the second study, I identified different learning trajectories among undergraduates, culminating in a final paper for my advanced qualitative research methods course.
Pilot Study I

The first pilot study was drawn on data from my first semester as a teaching assistant (TA) in the undergraduate course associated with *El Pueblo Mágico*. In this pilot study, I looked at the layers of learning that occurred between undergraduates’ learning and my learning. During this process, I also realized the importance of engaging in emotional and reflective spaces. Below, I describe a particular point of rupture that I experienced and how my own experiences resembled those of an undergraduate student named Kim. Without experiencing the tension described below, I would have not seen the importance of three forms of mediation that are now central to my analysis, including (a) Change Laboratory, (b) layers of learning, and (c) use of boundary artifacts as a way to conceptualize *El Pueblo Mágico* as a learning ecology.

Kim and I first met during the Fall 2010 course, which was the first time the 4411 course was offered at CU and the first time I played a role on the instructional team. Kim was involved primarily in two learning environments, the undergraduate class and the after-school site, and I was involved primarily in the undergraduate class and the instructional and research team meetings. It was only in preparing to share my findings for an American Educational Research Association (AERA) paper, almost a year after the course, that I fully realized the importance of my relationship with Kim. I realized more deeply the meanings of co-constructed learning and mediated praxis. I realized that we, the instructional team, were being apprenticed in our teaching trajectories.

The idea of talking about this rupture in a public forum, like AERA, was not initially my idea. I had spoken with Professor Susan Jurow about my experiences and the learning process that was occurring for both Kim and me. She encouraged me to write about this point of rupture
and how I felt I had “messed up” in class, and how my mess up was a point of learning. Although this was my finding, I initially I did not feel comfortable with the idea. I was new to the academic world and nervous about telling the audience how badly I had messed up for my first public presentation. This did not feel like a good idea. However, through Professor Jurow’s coaching, I was able to work through my worry and frame the first pilot study in a way that felt honest to my tensions and also showed the way that El Pueblo Mágico was pushing my learning in similar ways that we were encouraging the undergraduates. In the following sections, I highlight themes from this study that were also central to the analysis I present in this dissertation.

**Co-construction of knowledge.** When I started as part of the instructional team—like many beginning teachers—I was nervous about making a mistake or giving the wrong information. This manifested from my common sense notions that I later realized I carried with me and were also congruent with the common sense notions of teaching, learning, and culture that I explain in more detail in Chapter V. My common sense was that the teacher should have the answer—the correct answer. I bought into the idea that as a doctoral student and as a person positioned as a “teacher” I should be able to answer the questions posed by the undergraduates on theories that I had been learning in graduate school. The fact that I had fallen into this way of thinking—this idea that the teacher should have the right answer—was made evident the second week of class. The topic was zone of proximal development (ZPD). It was the first time we organized small group discussions in which the instructional team members worked with the undergraduates whom they would be giving written feedback on their assignments. Kim was in my feedback group.
In my small group, the following question was presented by Kim: *What is the difference between the zone of proximal development and scaffolding?* We had just talked about this topic at our weekly instructional planning meeting. In response to Kim’s question, I answered that the zone of proximal development describes a more open-ended learning process, whereas the term “scaffolding” suggests learning toward a predetermined endpoint. It is also often one developed by an adult for a child. In teacher education and educational psychology research the term “scaffolding” is used more generally to depict any kind of assistance. The distinction we were drawing in class was therefore something new for the students and, in some respects, for me.

Kim thought about my answer and then asked a follow-up question: “So scaffolding is negative right?” I responded, “No, scaffolding can be positive.” She said, “But my understanding for the way it was discussed is that it is negative,” and then further questioned, “Are you sure it is positive?” “Yeah it can be positive,” I answered. She responded, “Are you 100% sure?” “Yes,” I replied but feeling odd that I had given a one-word answer.

Just then, Professor Gutiérrez brought the class back together for a class-wide discussion. The distinction between ZPD and scaffolding was brought up again. Kim then asked Professor Gutiérrez if scaffolding was a positive thing. Professor Gutiérrez said it could be both positive and negative. After this comment, my heart sank. Professor Gutiérrez explained that it could be positive if, for example, you needed to get to a certain point, like helping a child cross the street. It could also be negative because it can be restrictive if the endpoint is always predetermined.

I felt. Horrible. I had given the student an impartial, if not wrong, answer to her question and I did so in front of all of the students to whom I would be giving feedback for the entire semester. So many things were running through my head—was I the right person for this teaching assistantship? Did my students think I was just making stuff up? As I write this it
sounds, honestly, just kind of funny, an experience that happened. But I want to highlight the emotional toll that this experience took on me. I was embarrassed and more than anything I wanted to hide this experience, bury it, and not tell anyone about it. There have been two points in my career that caused me to seriously question whether I belonged in the doctoral program, and this was one of them. To be honest, I had also had a reflective and embarrassing experience in my other research assistantship that happened to coincide the same week as this incident. My embarrassment for this mess up was profound. Writing about “mistakes” and making them public was foreign to me. I thought findings were supposed to be about successes.

I talked to the instructional team about my experience, and through this reflection, I started to realize that by positioning myself as an “authority” I might close myself, and my students, off to learning. After some thought, I realized that the only thing I could do was talk to the undergraduates and let them know that although I had been working with the theories for longer than they had, we were going to be learning these theories together. This seems so obvious; however, my common sense notions about teaching and learning influenced my actions in a deeper manner. In the moment of being asked about scaffolding, I felt I had to give the right answer, or at least have an answer. Through reflection, I realized there is a difference between understanding theory—even a nuanced understanding of theory—in comparison to a deeper understanding that becomes embedded in actions. I ‘knew’ that learning was a developmental process and I ‘knew’ that learning was supposed to be a co-construction of knowledge, yet my common sense was so powerful that it overrode my actions. This tension, this mess up, was the seed that helped me start to understand that discomfort and the sense of confusion—this inner contradiction—was a catalyst to deep sense-making. It also reminded me that through examining these inner contradictions, I also needed to be available to be in emotional and vulnerable spaces.
I also realized the deep learning that was being organized not only for the undergraduates, but also for us as graduate students.

**Parallel learning and rupture.** Through writing my AERA paper, reflecting on my experience and re-reading the undergraduate cognitive ethnographies, I realized that Kim underwent an experience very similar to mine. For example, the understanding of the co-construction of knowledge and the realization that I as a TA did not have to be “right” all of the time was something that Kim also came to understand. In her self-reflection she wrote:

> The allowance for a conversation also increased my confidence in what I wrote. . . . My cognitive ethnographies could be filled with questions and throat-clearings. . . . **Had I not received any feedback, I would have acted much more confident in my responses, even when I did not actually know what I was talking about.** The feedback and the decreased formality of the assignment, therefore, increased the amount of learning. This practice allowed for increased learning because I humbled myself to a place where I did not know everything; I allowed her to answer questions, and I learned through that route rather than pretend to know everything [emphasis added]. (Kim, Cognitive Ethnography)

Kim, over the course of the semester, also learned the importance of not having the right answer. As she stated above, without the feedback she would have “acted much more confident” in her responses. She writes that by not needing to have the right answer, she was able to “increase the amount of learning” that she engaged in. Learning in an uncertain way—in an incomplete way—allowed her to move beyond the posturing of having the right answer.

I continue to be surprised by how much my experiences as a learner paralleled Kim’s. I, as a doctoral student, and Kim, as an undergraduate, both experienced shifts in understanding that learning is a process, and as a result, we did not have to “know everything” or have the right answer. I have to admit, retrospectively, that these shifts were freeing. It also allowed us to create a space in which to engage in a conversation, where Kim could ask questions and work through her understanding, and through responding to her questions and her sense-making process, I also
continued to learn by revisiting texts, rearticulating my understanding, and reflecting on my actions.

**Mediated praxis.** This experience of coming to understand that learning is a co-constructed process maps closely to the ways Kim and I also engaged in mediated praxis—the organization for the unification of theory and practice. We moved from simple reflection to reflection and action. The realization of my engagement in the process of mediated praxis occurred as I read back through my feedback for the field notes. Professor Gutiérrez suggested to us TAs that we should think of our feedback to the undergraduates as creating a conversation with the students. As I reread the interactions with the undergraduates through my feedback I was surprised to see how it really was a conversation and how discursive and interactional I was in the feedback and how much effort I put into validating student experiences both in theory and emotion.

I also further realized that I did not do this on purpose—I wish I could claim that it was a skillful use of a pedagogical practice. Instead, this technique really did stem from feeling like I messed up at the beginning of the semester. It came from my accepting and acting upon the understanding that learning is a co-constructed developmental *process*. Through my experience with Kim, I realized that the only way I was going to make it through this semester and be productive for the students, was to take a much more dialogic relation toward the students, where my ideas were open to being questioned and both the student and I would have to return to the text to figure out any discrepancies in our conceptualizations of theory. I needed to think *with* the students so that we could all learn together. Seeing how my experiences in class shaped my actions and enhanced my understanding of the theories that we studied together further solidified the fact that I, too, was in an apprenticeship.
Throughout the semester, Kim also moved from reflection to engaging in praxis. She moved from being in a role of a reflective observer to playing the role of an engaged participant. Initially, for example, Kim at times would pose questions and then answer her own question in the reflection/analysis section. I say reflective observer because I found out during a research team meeting involving both the site team and the instructional team that Kim privileged note taking over participation. Just before one of her last visits to the after-school program, I sent her an email encouraging her not to take any notes. She was a little hesitant, but she tried it.

In her CE, it was evident that Kim engaged with the students in a different way. As documented below, she took on the role of a learner—in which the elementary student was teaching her how to play the games. This was the first time she had fully taken on this role. This undefined role was uncomfortable as she described in her field note:

Personally, I was more engaged and was participating in each game that we played. I enjoyed playing Jenga and her version of Cranium, watching her strategy, and just being around a citizen that was enthusiastic. . . . I wonder now, looking back, if I did not play enough of a role as a mediator. I pretended not to know how to play any of the games. . . . Was this ok or was I not doing my job? I am trying to think through the goals of [the after-school program]. There are many different roles to play at site: teacher, mediator, teammate, friend. (Kim, Cognitive Ethnography)

This excerpt shows Kim struggling with the various ways she can be a participant in the after-school program. It is also a shift from her previous field notes in a couple of ways. First, she recognized she was more engaged. Second, up to this point, Kim had consistently been concerned with hypermediation, or excess and nonstrategic mediation that can detour the student from the learning goals (Gutiérrez & Stone, 2002). In the excerpt above, Kim asks whether she played enough of a role as mediator? She was, for the first time, not concerned about hypermediating but about under mediating. Her grappling with the concepts of mediation may have been a result of her changing her role as a participant. As she explained:
After learning that I took ample notes while at [the after-school program], Liz encouraged me to spend the next site visit without my notebook. Again, this broke the usual barrier of formality. **I did not have to be perfect in regards to note-taking.** . . . Instead, the [field note] writing was a dynamic, almost non-judgmental process. . . . I was left to explore and to think on my own. By taking fewer notes during . . . visits, I was able to engage with the [students] more and to work on re-mediating activities. **I became more a part of [El Pueblo Mágico] and less of an observer.** Of course, I no longer had the same amount of detail in my [notes], but I was changing my role with the citizens [emphasis added]. (Kim, Self-Reflection)

Here, Kim applied the ideas of a conversation, of making mistakes, of the barrier of formality to the way she was participating at the site. She recognized that she started to engage students in a different way as she “became more a part of [site] and less of an observer.” The unease in this change is still evident as she wrote this realization with a disclaimer: “Of course, I no longer had the same amount of detail in my [notes], but I was changing my role with the citizens.”

Both Kim and I, through these conversations, through these forms of mediation, came to learn that reflection and cerebral understanding of a theory does not lead to the creation of robust learning environments. Reflection *and* action are both needed to foster transformative learning and learning that leads to new ways of understanding and embracing theory as Gutiérrez and Vossoughi (2010) wrote, “We can become conscious of the theory-driven nature of practice and become more deliberate in our use of theory as a tool for organization, decision making and refection” (p. 104).

At that time in my development as a learner, I still struggled to define mediated praxis. I understood, as much as I could at the time, the notion of praxis and the notion of mediation, but to articulate mediated praxis as the organization of a learning environment to foster praxis only started to emerge through this pilot study. Further, I explain in the next section about my second pilot study that I conducted as part of my Qualitative Methodology II course, I further learned that praxis does not have a set path and is a messy process.
Pilot Study II

My second pilot study was an extension of the first pilot; however, I focused on understanding Kim’s trajectory in relation to other undergraduate trajectories toward the unification of theory and practice. After rereading the CEs for all of my feedback group, I narrowed down the study to include Kim, who started off with a very strong understanding and ability to play with theory, and Annie, someone whom I described to Professor Margaret Eisnehart during our meeting on my data selection as someone “who got it but maybe it took a little longer.” During my reading of these 16 CEs, eight for each undergraduate, I also brought my feedback into my analysis in terms of how my feedback may have influenced their shifts in thinking. I wrote in my original paper:

However, it would be faulty and frankly presumptuous to assume that it was because of the feedback that the shifts occurred. *El Pueblo Mágico* and EDUC 4411 form a larger ecology that is organized purposefully to foster mediated praxis, of which the interactions in the cognitive ethnographies were only a tool and a sliver of the larger ecology. Instead it is useful to think of the feedback as a way to document and observe the transformations that occurred in the CEs. For example, comments that were found in both of the Ugs CEs were coded in terms of theory, reflection, push back as well as comments that were more supportive in nature but did not add a lot to the conversation in terms of theory (Elizabeth, Final Paper).

This excerpt demonstrates the way I was working though understanding undergraduates’ shifts toward the unification of theory and practice as well as the role of instructional team feedback. The aim was to understand shifts toward the unification of theory and practice as documented in the CEs and to some extent the feedback they received from me as an instructional team member. I also tried to, through this pilot study, to understand and make sense of my own understanding of mediated praxis. For example, a large part of my feedback on my final paper (the second pilot study) was that I was unclear on the definition of mediated praxis and conflated, to a certain degree, mediated praxis with joint activity. Although these are two interrelated concepts, I was
trying to figure out their relationship. I mention this because my dissertation was influenced by a history of ideas leading up to my research questions grounded in experiences that extended beyond the semester of official data collection.

In the findings from my second pilot study, I documented the way that both undergraduates, by the time they wrote their eight CEs, had worked to bring in both theory and practice. However, they had different trajectories. In her first CE, Annie documented site activities without a lot of use of theories to make sense of what was happening in the interactions. By CE 8, she was bringing both together. On the other hand, Kim had almost an opposite trajectory, starting with a lot of reflection and theory and moving toward reflection and action. I have included my findings in Appendix A. These findings were important because again through an examination of student learning trajectories, I realized both students were moving toward the unification of theory and practice, but they had very different trajectories. This observation made me realize the importance of having multiple points of entry into learning environments.

I also recognized that the CE functioned as an extension of the learning environment. This is part of the design; however, I was able document how it functioned as a learning environment. I outlined three ways classroom conversations were carried into the CEs: (a) the creation of informal and comfortable environments and conversations, (b) pushback and questions from the instructional team feedback, and (c) format and structure of the cognitive ethnographies. Below, I briefly describe each category.

“Informal” and “comfortable” environment. As I coded for my feedback, I created a category of codes initially called “emotional.” Examples of this code were comments like “Nice,” “I agree,” and “I heart Glee.” As I reconceptualized these comments, I realized that through these casual comments, I was creating what Kim in her self-reflection called an “informal” learning
environment in the CEs. These comments, in addition to words like “I think” in the feedback and questions like “do you agree?” created a sense of a conversation, more so than corrective feedback. In the pilot, I noted that after a couple of CEs, Kim and Annie started to ask questions in the CE. For example, in CE 4, Annie asked about what the check plus, check, and check minus meant and how they were being graded. This represented a moment not only in which she asked a question, arguably, but a question to which she was expecting a response. In this way, she too saw the CEs as a place for conversation.

**Pushback, suggestions, and questions.** One other possible aspect of fostering meditated praxis, and an extension of an informal or comfortable environment, is the understanding that learning is a process. This idea was reiterated in the undergraduate class on multiple occasions and I also mentioned it in my feedback to both Kim and Annie. The importance of this pushback was best summarized by Kim in her self-reflection when she wrote: “Had I not received any feedback, I would have acted much more confident in my responses, even when I did not actually know what I was talking about.” There are two important elements that are present in this statement. First, she had to recognize that she did not have to have the right answer, if there was a right answer. Second, being open to and having a different lens to analyze the situation can also help foster a new, deeper understanding of the situation as well as theory.

**Structure of the CEs.** In trying to understand the influence of the feedback on students’ movement toward praxis, I realized that students were engaging in a conversation with me and answering my questions. However, I also realized that my feedback was admittedly not as insightful as I would like to say it was. Instead, I was following a format of feedback that was embedded in the structure of the CEs. For example, in the CEs students are supposed to separate out low-inference statements and observer comments. In the following excerpt from Annie’s CE
3, I asked her to make this distinction.

This is also where the problems between Tony and Regina began. She did not want to work together on the project and complained about having to work with him. She finally agreed and said that she would make up the design if, “you do the rest of the details” with big flailing hand motions to go along with her rolling eyes. She was so concerned with being in control [This is great insight, but since it goes beyond just the observations it would go in an OC] of what went on the she didn’t seem to understand exactly what the project entailed and it took a couple of tries of explaining to her until she finally listened and understood what each of their jobs were to make the project complete. They decided to make a toy chest in a playground. (Annie, Cognitive Ethnography 3)

This type of comment, reminders to separate out OCs and low-inference statements, was documented on a consistent basis either in the text or in comments at the end of the CEs. Again, in retrospect, this seems like an obvious part of the design; however, when I was writing my findings from my second pilot study, I remember vividly realizing that the CEs were structured in a way to not only support undergraduate learning but to help provide a format for us as instructional team members to follow.

Thus, both of these pilot studies influenced my dissertation as I started to understand my own learning in the El Pueblo Mágico learning ecology. I also started to realize that I was participating in practices that were established and intentionally designed but of which I had not yet established awareness. To be able to adapt the model to other sites—including precollege and college retention programs—I felt I needed to understand empirically the ways El Pueblo Mágico was organized. With this insight, my research questions were organized in a way that was geared toward helping me understand and attain a meta-awareness around the practices in which I, along with the undergraduates, was participating.

**Dissertation Data Collection, Reduction, and Analysis**

Through the pilot studies, I learned about the ways that the undergraduates, and I as an instructional team member, were shifting in understanding theory and practice. Although I had
begun to see evidence of shifts, I wanted to test my claims against a broader sample in the course and in understanding the roles of mediational tools present in the learning environment. As a result, I focused my study on the instructional team and undergraduate course as the primary sources for data collection for the 2012 Spring Semester. I have summarized my research questions, my unit of observation, and data sources in Table 1.

Table 1

*Research Matrix With Research Questions and Associated Data Sources*

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Units of Observation</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) What conceptions of learning do undergraduate students articulate about teaching, learning, and culture? How do these conceptions change over time?</td>
<td>Classroom discourse written and oral</td>
<td>-Cognitive ethnographies -Response to reading -Self-Reflection -Pre- and Post-Surveys -Video of class discourse -Interview (audio) (End of semester)</td>
</tr>
<tr>
<td>2) What forms of mediation are available in the <em>El Pueblo</em> ecology? What do these forms of mediation look like?</td>
<td>Instructional conversation</td>
<td>-Video (instructional talk)</td>
</tr>
<tr>
<td></td>
<td>Instructional practices</td>
<td>-Classroom artifacts (cognitive ethnographies, self-reflections and response to readings, classroom handouts)</td>
</tr>
<tr>
<td></td>
<td>Instructional team meetings</td>
<td>-Instructional team audio (weekly)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Interviews of instructional team (end of semester)</td>
</tr>
</tbody>
</table>

The first question addressed the undergraduate conceptualization of learning, teaching, and culture as articulated by the undergraduates. In my pilot studies, I documented shifts toward
praxis; however, I did not want to assume that I knew students’ common sense notions of teaching, learning, and culture or assume that I knew the shifts based on my pilot study. As a result, my first question was designed as a way to understand common sense notions around teaching, learning, and culture and to document shifts, if any. As displayed in Table 1, I collected multiple forms of data. As I discuss in the data reduction and analysis process in more detail, for the first question, I relied most on student self-reflections and class discussions.

I created the second question to capture forms of mediation that were present in the classroom and the way they were implemented. Thus, I collected data from both the classroom and the larger research team. For the larger research team, I collected data from all group research team meetings, instructional team meetings, and site team meetings. I ultimately focused on classroom data and instructional team data. I used the group research team meeting and site team notes and audio only on the occasion when I wanted clarification on a certain point of uncertainty or I thought specific meetings could help me clarify a point of interest.

On a side note, my research questions have not changed a lot from the questions in my prospectus. Initially, I was worried about this. I have come to understand that as part of the process of conducting research, questions become more defined as the analysis is honed and findings emerge. For some time during my writing of my dissertation, I worried that I did not do enough work because my questions had not shifted. Retrospectively, I realize that my questions were fairly general, and that they probably did not shift as much because I had been working with *El Pueblo Mágico* for 3.5 years prior to my official dissertation data collection and I had conducted two pilot studies. So the questions were fairly honed at the start of this process.
Research Participants and Data Sources by Activity System

In this section I describe the participants and data sources collected in the two activity systems that I focused on: the undergraduate course and the instructional team.

Undergraduate Educational Psychology Course

Participants. In this particular section of the undergraduate class, 25 students were enrolled and consented to the study during the Spring 2012 Semester. Given that the course was a prerequisite for the teacher education program, many, but not all, of the students were interested in becoming teachers. In terms of majors, we had a strong representation of psychology majors (34%) and other majors included history, journalism, sociology, and geography.

Data sources. Data sources for the undergraduate course included classroom artifacts (cognitive ethnographies, response to readings and a pre-post survey) as well as classroom video. Classroom artifacts consisted of the following:

Cognitive ethnographies. For the Fall 2012 Semester, students each completed a total of six CEs. CEs were turned in on a weekly basis and intended to document the moment-to-moment learning that occurred at site as well as engage the undergraduates in making bridges between the theory engaged in the course and the practices they participated in at site. The CE had four sections: (a) general site observations, (b) narrative, (c) summary of tools and assistance, and (d) reflection and analysis. Each student received feedback from one of the instructors who provided intensive feedback to all of the students in their feedback group. The feedback groups were divided evenly among the instructional team. My particular feedback group was selected to include: (a) students who consented to participate in the study and (b) students who attended practicum on either Tuesday or Wednesday, days I also observed at the site.
Readings/guiding questions. Each week, students completed at least one response to reading assignment where the undergraduate students addressed the topics from core readings such as cultural historical perspectives of learning, the role of the teacher, notions of cultural practices, mediation, and the zone of proximal development. Each response was prompted by a question developed by the instructional team. The response to reading was key for gaining an understanding of how students made sense of the readings and related concepts.

Pre- and post-surveys. The pre-survey was administered on the first day of class after students had returned their completed consent forms and all questions about the study had been answered. The pre- and post-survey were adapted from a previous survey used by other Fifth Dimension models and has been collected for four previous semesters. I focus only on the responses from this class.

Self-Reflections. Students wrote a self-reflection paper at the end of the semester designed to help them reflect on how their understanding of the various theories/issues/ideas introduced in the course developed over the term through their participation in class activities and their learning and participation at the after-school program.

Research Team

Participants. The instructional team was composed of three individuals, of which I was one. All three members had been on the El Pueblo Mágico project since it started at the university in 2010. There were two returning instructional team members and one who had been a site coordinator. The three comprised an instructional team for the first time during the Spring 2012 Semester. The instructional team worked closely with the larger research team. The whole research team was comprised of 12 individuals: five graduate students, one faculty, two research associates, and four undergraduates. The undergraduates were in the role of learning assistants.
(LAs), and they attended site one day a week as well as one of the undergraduate courses. They each had completed one semester of the course and applied to be in this position for a 1-year term. Additionally, two LAs were taking an independent study for course credit that involved the site.

**Data sources.** The research team can be subdivided into the instructional team and site team. I collected data from both teams; however, I used the instructional team data as primary and the site team and all group meetings as supplementary data that I referred to only for specific topics. All meetings were audio recorded. In addition to audio recordings, I collected artifacts, such as handouts and meeting notes for each meeting.

**Data Reduction and Analysis**

From August 2012 through June 2013, I uploaded my audio and video data into *Transana* and created content logs for the classroom videos and the audio recordings of the instructional team meetings. I did this in sequential order. For example, I created a content log the instructional team meeting prior to the content log of the undergraduate classroom. For the first 3 weeks of data I developed content logs of all research team meetings, including the instructional team meetings, the site team meetings, and all the group research team meetings. After realizing the voluminous amount of data I had collected, and through discussion with faculty, I narrowed my content logs to include only the instructional team meetings and the undergraduate classroom video.

I time stamped all of my content logs in a maximum of 5-minute intervals. I made sure to include turn talks (Erickson, 2004). I also documented in my observer comments any interactions that I wanted to return to and any reactions or interpretations that caught my attention. I did this
in particular for intonations or movement in the classroom that in the moment I wanted to remember when I read written content logs.

As I reduced my data, I kept memos of interesting moments or patterns I saw. I also kept a journal for thoughts and data displays (Miles & Huberman, 1994). These artifacts served as raw materials for later analyses. Pilot study I, for example, was inspired by one such memo about parallel learning.

As I completed the content logs, I uploaded them into Dedoose to begin my coding process. Given my grounding in the course and the literature, my first set of codes were inductive and deductive (Sipes & Ghiso, 2004). I started my first set of codes by reading the undergraduate classroom data and making categories or “buckets” (Schensul, Schensul, & LeCompte, 1999) as I reread the content logs. I did this because I wanted to see what patterns emerged in a way that would help me not assume what might emerge based on my previous experiences with the course and previous pilot coding schemes.

From June 2013 to December 2013, I recoded my content logs and removed codes that were largely influenced by site team and research team meetings (e.g., collaborators and emerging tensions). I did this because I realized that I had a lot of data and to manage it, I wanted to focus on the instructional team and undergraduate course. For example, one of the codes that I eliminated was collaborations, which referred to research team discussions about potential and current partnerships related to the use of agent sheets. Although this information is interesting, it did not directly address my research questions. The new codebook that emerged can be found in Appendix B. I also documented the frequency of codes to ensure ideas that were emerging were representative of the course.
As I coded my second set of codes, I became increasingly interested in the instructional team moves that I believed played a large role in the facilitation of the discussion. For example, an idea that I played with for awhile was the code of “lynchpin.” Alexa, one of the instructional team members, was great at facilitating discussions and after reading the content logs, I noticed the way that she would either summarize a student comment, return the question back to the class to continue discussion, or pose a new question to help students understand the nuances in the concepts. I was attracted to this flow of facilitation as I found it provided great counter examples to other forms of adult-centered facilitation, for example, initiate-respond-evaluate (I-R-E). I-R-E is a common practice in classrooms but does not allow opportunities for students to repair ideas and comments, which is foundational to learning (Cazden, 2001).

In addition to the lynchpin code, I also documented the movement within each class from small group to large group and the amount of time that was spent in lecture format, which I defined as more than 5 minutes of instructional team talk. I was interested again in documenting the way the majority of the class was spent in either small group or large group discussion. In Appendix C, I provide an example of the tables I created to break down and observe both lynchpins and classroom movement. In the table, I included a time stamp, the total minutes of the interval, the grouping category (lecture, small group, large group, or individual work), the artifacts that were present both tangible and nontangible, and notes to help me remember actions that occurred or to spark an idea for the analysis. Although this idea was interesting and captured my attention, I found I was focusing on a mediational tool but not in a way that really addressed my larger question about the design of the ecology.

In addition to this table, I also created lists of excerpts from Dedoose and placed them in an Excel spreadsheet to make sure my codes were consistent and representative across the
semester. I also used the spreadsheet to look at excerpts at a glance as I was writing. With so much data I wanted to make sure I was selecting excerpts that were representative but that also flowed well in the narrative. As I tried to write my memos and chapters, I realized that the excerpts in my spreadsheet needed to be read in context of the class activities. As a result, the tool that I thought would help me look across my data was actually constraining my results because the context in which the excerpts happened was important and often was not confined to a few lines, or even a few paragraphs that fit into an Excel cell.

As a result, I recoded all of my data in a Word document and focused on ideas that were emerging through the second round of coding. After doing this I tried to write vignettes for each week to see if I could identify a way to both show examples in various classes as well as across the semester. However, as I tried to write up different points of interest for each week, I realized that I had summarized important and interesting points from each week, but I was not making any connections or providing insights about the design that I was so interested in. I wrote about this in my journal:

I don’t even want to read this, much less make anyone else read it. I am realizing that I am privileging the process of learning, thus I have the week-by-week development, but I think it waters down the argument and I do think connecting it to deficit thinking. It has been an embedded idea that I have not made explicit. Also, with this format there is not other header than week by week. I am not sure what else to do so I am just relying on this [week by week analysis] to the point that it is a constraint. Since I have the patterns I may be able to put it in the design chapter. (Elizabeth, Journal Entry, 12/29/13)

At this point I was frustrated because I felt there were so many interesting points to write about, but I was missing the aspect of design that I was initially so interested in. I started to think about what it was that a practitioner would want to read. From my experiences working in student services, I realized that I needed to think what were the biggest bullet points. By biggest bullet points, I meant a quicker version that was accessible to a general population but that maintained
enough complexity to honor the richness of the design and was primarily grounded in social
design experiments or cultural historical theories. The idea of a bullet point occurred to me when
I was in a student services meeting, and I realized that the ideas that were broken down in
manageable chunks were the ideas that were being taken up. For me, the biggest bullet point
simultaneously captured the idea of what constitutes social design experiments and allowed
enough depth so that implementation could not happen without engaging in the complexity of
theory and practice.

At the same time that I was playing with the idea of lynchpins and to help me
conceptualize the biggest bullet points, I returned to the Gutiérrez and Vossoughi (2010) article.
As I reread the article, I broke down the article into each paragraph, added comments about how
the content might relate to my data, and applied codes that I thought were relevant to the
paragraph that I had in my codes. I found that there was a lot of overlap between my codes and
the article. I have included examples of this breakdown in Appendix D.

In retrospect, this made sense as El Pueblo Mágico was designed as a social design
experiment. In the moment, I was pleasantly surprised and this revelation helped me feel like I
was on the right track. I cut out each paragraph into emerging themes. This helped me to think
about bigger bullets, but I continued to struggle with the organization of the dissertation. At this
point, I still continued to conceptualize layers of learning, movement across boundaries, and the
Change Laboratory, three tenets of the social design experiment that I discuss in Chapter VI, as
three different chapters. With so many chapters, I further struggled with trying to figure out
which chapter I was going to take out. Because I felt so strongly about each concept and felt each
was instrumental to the design, I was stuck playing around with organization for a few months.
In December 2013, I also shared a draft of my first analysis chapter that addressed students’ common sense notions around teaching, learning, and culture with Professor Ben Kirshner and Professor Kris Gutiérrez. Through their feedback, I realized that I was not being explicit about how I was conceptualizing common sense and that I needed to articulate my definition more clearly in the chapter. I also received feedback that the classroom data I was using did not demonstrate clearly the claims I was making about common sense notions. This meant I could use the classroom data for triangulation, but these examples were not enough. With this feedback, I returned to the self-reflections so I could document in students’ own words the way they explained their notions of learning, culture, and teaching prior to the start of class, the shifts they articulated as they participated in the course, as well as any tools they mentioned that they believed aided in their new understandings.

As I moved back and forth between my analysis chapters, I worked with my advisors to help me figure out the organization of my other chapters, and they pushed me to think about them as fitting into one chapter. I hesitated to do this in earlier drafts, as I felt it was too much to fit into one chapter, but I also could not figure out how to separate out these ideas. With this new conceptualization of the second chapter, I realized that each of the concepts—Change Laboratory, layers of learning, and boundary artifacts—could be conceptualized as design tenets. This conceptualization maintained the complexity and the need to utilize all of the practices and also, I argue, made the idea of a social design experiment accessible to a more general audience.

From February 2014 to April 2014, the majority of my time was spent writing, organizing, and editing my chapters. I have revisited data to double check quotes as well as revisit the classroom data to capture tone and interactions in an accurate manner. During this time, I also integrated some of the data displays that I had been drawing in my journal. In addition, through
this process, I sought to use data that were both representative of my data and allowed for a cohesive narrative to emerge. For example, I selected the data in the “mirror” section as they all had similar themes of students’ own recognition of labels, and each occurred on different weeks. This allowed me to show that similar concepts were being understood by different students in the presence of different mediational means and over the course of the semester. Also, for the examples in the inner contradictions sections, I tried to highlight examples that reached back to the first analysis chapter about the relationship between teaching and learning and learning and culture. In this way, I privileged the idea of the saturation of tools over trying to select examples that were also interesting but did not “hang” as well with the other data points. In the final data displays and examples, I do not discuss the events of Week 6 or Week 9. Retrospectively, I would have never guessed this would be the case, as both weeks had really great examples of sense-making. For example, in Week 6, in a large group discussion, students had powerful interactions around the idea of counting mistakes as part of learning. In Week 9, some illuminating exchanges emerged around the way students started to develop a nuanced understanding of the theories learned in class. In future iterations of this work, I may be able to think more about how these data points may also fit under a current or new big bullet.

Last, in the final presentation of my data, I focused on data collected from Week 2 to Week 12, which were organized primarily around the discussion of new concepts and the introductions of readings and included movement between large and small group discussion. I argue that the three remaining weeks were qualitatively different because they involved small groups focused on the preparation of final papers.
Limitations

First, one of the most evident limitations of my study is the focus on the instructional team and the undergraduate classroom, without systematic data reduction and analysis of the site data. Although I think that through both CEs and classroom data I captured patterns and some understanding of site activities, I was not able to document direct undergraduate actions at the site. Because of this, I did rely heavily on student perceptions of changes in their actions and understandings at the site.

Second, I would have used audio recorders with each group for the final project. As mentioned above, the final research paper was a great space for sense-making, but as I content logged this data, I realized that I was not able to track small groups in a cohesive manner due to the angle of my camera, inconsistency in the focus of particular groups, and difficulty with picking up sound. This was also due in part because I was helping to provide feedback to the groups, so my primary focus at the time was to listen and engage with the students.

Third, as I was content logging the data, I found that I was relying heavily on verbal interaction. Knowing that the way content logs are created influences the final analysis (Ochs, 1979), I did try to capture some physical positioning, such as students looking ahead and movement of the instructors. However, this was inconsistent. I noticed this early in my content logging but decided that I was interested in language as a way to understand shifts. However, I do know I omitted some data as a result of privileging verbal interactions.

Fourth, due to time constraints, I was not able to conduct the end-of-the-semester interviews. Although this would have been ideal and was intended to function as a member check, I do believe that through the use of data via the classroom and classroom artifacts, I triangulated the data to form my claims.
Fifth, given my involvement as both a researcher and instructional team member, I have to assume that my role as a researcher may have played a role in the way students interacted with me and potentially placed restraint on the classroom discussion with the presence of the camera in the classroom. With this, however, given some of the informal conversations that were captured during small group discussion, I do want to also recognize that some students also felt comfortable with the cameras.

Sixth, I initially wanted to look more at shifts in students’ understanding of culture in relation to race in addition to learning. However, as I more closely examined my data, cultural mediation and cultural practices were discussed frequently and across the semester, but explicit discussions around culture and race were limited primarily to Week 7, the discussion around cultural practices. Although five students mentioned that through the course they were able to disentangle or complicate the relationship between race and culture, the lack of systemic discussions of racialized practices across the semester was a limitation as well an implication for future semesters.

Seventh, El Pueblo Mágico is a large and growing social design experiment. As I documented the class practices, I often wondered if these tenets could also be found in other forms of implementation of the course. Although a triangulation of my findings with other similar courses would be interesting, it was beyond the scope of this study.

**Role of the Researcher**

I had been involved in El Pueblo Mágico in some way since its adaptation to the university starting in Fall 2009. At the time of data collection, my official role in the larger project was as a research assistant on the MacArthur Connected Learning Network Project (CLRN). The CLRN project sought to understand the way learning was connected and traveled
across boundaries like *El Pueblo Mágico* and the students’ homes. Previously, I worked as an “official” TA for two semesters and as a volunteer for one semester. I had not acted in the role of an “official” site team member although as part of my responsibility for the Macarthur project and a class in which I was enrolled, I attended site on a weekly basis over the course of one semester and worked with elementary students.

During the Spring 2012 Semester, I volunteered as a TA for the course and took on most of the responsibility of a full team member. This included providing feedback on papers and helping plan for the class. I volunteered for the site team but in a much smaller capacity. I attended the planning meetings, and I was present at site; however, I did not participate as a full team member in that I was not responsible for being a site coordinator at site or, for example, planning the end-of-the-year events. I did, however, help out with small tasks at site (e.g., checking in on groups, helping take down computers).

Because of my history with the program and my role of researcher, I experienced some tensions and struggled with my role. I have been a researcher in the past, for example with my pilot study, but I was using data that had been previously collected the semester before. During my data collection, I was surprised with the subtle tensions that I came across in my dual roles. For example, one student expressed that she felt that, at site, she was being closely watched because she was being recorded both with an audio recorder and a video camera. Although neither of these forms of documentation were directly related to my dissertation, I was very aware of students’ concerns about being part of a research project, and I let students know that they were able to opt out of the study.

I also took care to document any tensions I felt in my role throughout the process. These were in the form of written notes as well as verbal/audio reflections. For example, in particular in
Week 8, I felt my role as an instructor was more active than normal. In retrospect, this was because Alexa, the lead instructor, was absent from the class. In my attempt to help, I took a more active role. However, I did notice a change in my participation, which made me feel uncomfortable as I watched the video. In recognizing my tensions, I made sure to write in my observer comments, what I was feeling as I watched the video. I also made sure to document what I was doing with more diligence, as I wanted to make sure I did not underplay my role in the classroom interactions because of my feeling uncomfortable. This was one of the ways I remained attentive to my dual roles and influence as a participant observer.

In addition to these tensions, I also want to recognize that if it were not for this dual role, I fully believe I would not have been able to reach the same analysis. For example, as I mentioned above, it was only through writing about my mess up that I really started to understand the layers of learning that I was engaged in. It was for this reason, as I discuss in Chapter II, that I became so interested in the experience of an instructional team member, Melina, that was so closely related to my experience. Having documented similar experiences out of a small group of instructional team members was exciting to me. However, had my experience not mirrored that of Melina’s, I think this central aspect of the design would have been lost for a couple of reasons. First, as I was organizing the chapters, I considered multiple times only focusing on undergraduates due to the ease of telling a more cohesive narrative. Also, with so much data, I could have easily missed the profoundness of this moment.

This realization that I was gaining unique insight into the environment was powerful for me. Although I do not believe a researcher can be unbiased, I tried to make sure I documented my role as a researcher and was careful not to impose my experiences in ways that obscured the experiences of other research participants. Reflection on bias is extremely important, and I also
think that not often enough the insights derived from participant observation are documented as methodology.
CHAPTER V

ESTABLISHING COMMON SENSE

I never understood how much thought and practice went into the idea of learning. To me, learning was something that just happened, like compost. I used to assume that from the day you started kindergarten to the day you graduate from college, learning just occurred by being in school. (Elain, Self-Reflection)

Elain stated that before engaging in this class, she had not thought much about the meaning of learning. To her, learning was a naturally occurring phenomenon that took place just by being in school. Elain’s assumed understanding of learning is an example of how common sense notions develop over time in and through participation in societal practices (Cole, 2003). Elain’s end-of-the-semester self-reflection about her understanding of learning prior to the class echoed the ideas about learning held by many of her peers in the class.

Common sense notions about learning, like Elain’s above, are developed through individuals’ participation in practices that are imbued with dominant local and societal ideologies. Consider how the belief that “learning just occurred by being in school” can perpetuate common sense that knowledge provided at school is a more legitimate source of knowledge than out of school learning. This kind of common sense about legitimate forms of knowledge—for example, learning as the primary property of schools—has the potential to devalue informal learning and personal experiences and to privilege formal, school-based content. Common sense means that ideas about learning that are grounded in dominant ideologies continue without systemic examination.

Common sense understandings are socially learned practices that allow for “standard responses that are consistently but thoughtlessly deployed quickly for routine functions, especially in highly organized settings” (Haney-Lopez, 2003, p. 112). Thus, common sense is marked by an overwhelming sense of ordinariness, pervasiveness, and legitimacy and does not
require explanation or reflection (Haney-Lopez, 2003). Instead, common sense feels like breathing, it happens but without active thought of each breath. The notion of common sense provides significant explanatory power of how our thoughts and actions are actually reflections of personal histories. Like breathing, our actions are driven by our common sense notions of how the world works. The affordance of this unconscious action is that the world does not have to be reinvented every day, and thus, we are allowed to build on history. The constraint is that, like a fish in water, there is no need to engage in systematic reflection of where our biases lay in what we know and do. Common sense underscores both the enactment of dominant ideology as well as how actions and beliefs are reinforced and maintained.

I expand on Haney-Lopez’s (2003) definition to conceptualize common sense as an individual’s accrual of congruent experiences in activity systems over time. CHAT analyses typically look at activity systems, not individuals. I define “individual” similarly to the way Engeström (1999) defined a personal view, in which the individual “must be understood in the plural” (p. 177). This definition allows for researchers to make sense of the tools in use and the individual in the social. Utilizing this definition of individual in the plural, common sense is understood as both the individuals’ personal histories (individual) and the larger social context grounded in dominant ideologies (in the plural). This understanding of common sense further reiterates the way common sense is a connection between individual experiences and systemic and pervasive ideologies. Common sense is not an individual belief. Instead, it is a set of societal practices that are reinscribed and unchallenged over a series of developmental events and individual trajectories (Vygotsky, 1978). Another affordance of interpreting common sense in a CHAT framework is that I can use the elements of CHAT, in particular the division of labor, rules and norms, and artifacts to make explicit the congruence of common sense notions across
experiences. By congruence, as described in more detail in this chapter, I mean that as an individual has traveled across settings, the elements of CHAT have reinforced one another in a way that no tension, or awareness of a tension, has been created.

Understanding the connection between individual common sense as embedded in societal dominant ideologies points to the importance of providing opportunities for reflective practice and inquiry based approaches. Through this examination of common sense, novice teachers can examine their long held assumptions and their consequences and imagine new practices. The lack of systematic examination of learning creates a potential where preservice teachers may carry these practices into their future classrooms guided by default notions of learning and teaching.

As I began to conceptualize the chapters of my dissertation, I did not anticipate focusing so explicitly on common sense. This chapter became more critical as I recognized that by understanding common sense notions, I could understand actions in a deeper way. It became apparent that the students’ unexamined assumptions about teaching, learning, and culture—key constructs not only in the course but also in education in general—shaped how students talked about and enacted their beliefs. By understanding common sense notions of teaching, learning, culture, and the relationship between these constructs I gained insight into which elements of the design helped foster shifts and rupture old knowledge (Cole & Gajdamashko, 2009).

In the sections below, I discuss the way—similar to Elain—students developed their assumptions and definitions of learning based on their experiences and practices. To capture low-inference representations of students’ own understandings of their preconceived notions, I draw primarily on student self-reflection papers, a culminating and sense-making assignment in which students were given a general prompt (see Appendix E), as a means of capturing if and how their
own thinking about teaching, learning, and culture expanded, shifted, or remained the same. Since common sense is so ground into our way of life, it cannot be articulated or recognized until some event, action, or idea is introduced or made explicit that creates a tension in some way with our own common sense. As a result, common sense notions cannot be made explicit in the first person until recognition, or a shift, occurs in a way that allows for it to emerge; many of the common sense notions were discussed in terms of shifts from old assumptions to new understandings. For this reason, I chose to start with self-reflections as a way to understand, in a low-inference manner, students’ articulations of common sense prior to entering the class. In the following sections, I work to document student common sense specifically around the relationship between (a) teaching and learning and (b) culture and learning.

**Common Sense Notions of Teaching and Learning**

Common sense notions are the common patterns that, although acquired over individual experiences, have a coherent narrative. Common sense often is communicated as an assumption or definition made without systematic examination, but instead acquired through participation in societal practices. For example, in the self-reflections, out of 25 students, 17 were coded as not having explicit articulations or definitions of learning and/or made assumptions about learning through their experiences. In the same way Elain assumed learning just happened by being in school, assumptions made explicit were grounded in personal experiences. This is important because it demonstrates common sense at work. Even though many of the students in this study said they had not thought a lot about learning prior to the class, they all still carried assumptions about what learning meant.

Common sense notions of the relationship between teaching and learning are important to understand because, as my data supports, students’ preconceived notions were largely grounded
in their own personal experiences in often adult-led environments. An adult-led environment is undergird with the assumptions that the role of the teacher is to disseminate information, the role of the student is to accumulate that information, and knowledge is understood as a static thing to be acquired. An adult-led model is one that is susceptible to the banking model of education, in which students are viewed as empty vessels to be filled, undermining the importance of critical thinking (Freire, 1970).

In the following section, I demonstrate the ways that (a) learning was defined through physical positioning where students learned how to “do” and “act” school, (b) adult-led practices were common both in and out of school settings, and (c) common sense notions were evident in students’ actions in the class. I conclude by highlighting the way these common sense notions about the relationship between teaching and learning can become susceptible to the banking model of education as well as the deficit logic model (Freire, 1970; Valencia, 2011).

**Learning to “Do” School**

To understand common sense notions of teaching and learning, I created a table that separated out assumptions about learning, previous definitions of learning, shifts in understanding, and tools that students stated helped them challenge their preconceived notions as expressed in their self-reflections. Through the creation of this table, a pattern emerged. Eight students recognized their own use of placeholders (word substitutes) for the way they understood and defined learning.

Students explicitly wrote about using words like “successful” (Cain), “ideal” (Colleen), “conventional” (Janice), “productivity” (Jennifer and Becca), “standard” (Maggy), “had to look a certain way” (Erin), and “engagement” (Alice) as placeholders for their preconceived notions of learning and the role learning played in learning environments. After revisiting the data several
times, I realized that the placeholders underscored the physical actions of the student; instead of
the engagement of learning as a sense-making process. Alice, for example, wrote about the way
that she was using the term “engagement” as a way to make sense of learning and what learning
should look like. The following is an excerpt from Alice:

The biggest thing that I am taking away from El Pueblo this semester is that learning is
not a simple black and white thing . . . . Coming into this semester, I had not really given
any thought to what “engagement” in the educational system looks like . . . . I have always
been under the impression that if you are not committing 100% of your focus on
something (i.e., the teacher talking at the front of the room) that you are not focused
enough to be learning from it [emphasis added]. (Alice, end of Semester Self-
Reflection)

Alice described how she initially assumed learning was a black and white thing, not a process
but a destination that was either reached or not reached. She initially conceptualized, and to a
certain extent conflated, engagement as learning. For Alice, engagement had to look a certain
way in order for the student to be able to learn. This understanding of learning as being static and
black or white and needing the student to look the part, reinforces that the onus of learning is on
the student. One of these elements of responsibility for students is to communicate that they are
paying attention through physical actions, like looking at the teacher. In this way, the student
“appears” to be learning, and the teacher can continue the role of disseminating information from
the “front of the room,” further creating a division of labor and space between the students.

Janice, similar to Alice, had a strong preconceived notion of the roles for teachers and
students. Janice wrote that prior to this class, “I had only thought of teaching in the conventional
way, in which the teacher is telling the students about a certain subject.” The comments by
Alice and Janice are very closely aligned in terms of the roles of students and teachers. However,
there is a slight variation in the focus. Alice discussed the role of the student as showing
engagement, and Janice highlighted the role of the teacher as telling the students the content of a
subject. Again, the narratives look slightly different, but each understanding complements the common sense notion of an adult-led approach.

In the same way Alice understood “engagement” and Janice described “conventional,” Cain made sense of learning through the term “successful.” He wrote:

In the beginning of the semester my time with the students would be seen as successful when the kids were just simply working on the project, where they had pictures and notes to prove that they did anything that went toward the activity guide. . . . But as time went on, I became particularly interested in creating a setting where the kids would think critically about what they were doing while applying their interests. . . . Traditional teaching doesn’t necessarily view drawing as one of the fundamental aspects [of] learning, but because I was able to document the richest moments of learning at site I was able to see that learning doesn’t always have to happen from a textbook or lecture. When I look at the way I learn, I definitely know that people can learn a lot from non-traditional learning methods; however, that’s something that I don’t always think about [emphasis added].

Cain, through class and site activities, realized that he was defining “successful” as demonstrating that students were making progress toward the activity guide. The activity guide was a tool used at the practicum site that provided three levels of expertise—beginner, intermediate, and expert. The levels were to be used as guidance but there were no consequences for not using it. The conception of the adventure guide as a tool was communicated to students through explicit conversations about their ability to add or alter the activities outlined in the activity guide (Week 5). With a more rigid interpretation of the activity guide, Cain defined success as proving, through tangible actions, like photos and notes, that students were making progress toward completing the task. This definition of learning mirrors that of Alice where the act of learning took precedence over the process of learning.

Further, Cain, in his last sentence described that although he understood that people can learn from nontraditional learning methods, “that’s something that I don’t always think about.” This privileging of formal school-based knowledge is similar to Janice’s statement that the role
of the teacher should be to tell the students about a “certain subject.” It also bears resemblance to Elain’s idea that learning just happened in school. Through these narratives, learning as an accrual of “formal” school-based knowledge continued to emerge as the most pervasive definition of learning.

Notice that all of the common sense notions described above were explained in the context of understanding an alternative definition of learning, denoting a shift in students’ understanding. For example, Cain made a clear distinction between his definition of learning at the start and end of the semester. He stated that, “as time went on, I became particularly interested in creating a setting where the kids would think critically about what they were doing while applying their interests,” which demonstrates he was playing with a new understanding of how he defined successful and learning. I want to point this out because articulations of common sense can be made only when notions of common sense start to be recognized.

The Development of Common Sense Notions

I define common sense as an individual’s accrual of participation in activity systems over time. The congruence—or lack of tensions—across the activity systems is made visible through naming of the assumptions. Below, I use the activity theory triangle as a heuristic to make common sense notions explicit across elements of the activity theory triangle including formal and implicit rules and norms operating in society, division of labor in classrooms, and mediating artifacts—both tangible and ideational—that reify and perpetuate common sense assumptions.

Recall from the discussion of the conceptual framework that no triangle is static but instead is continuously moving across time as depicted in the figure with an open-ended triangle marked with n+1, to represent time as a continuum (Cole & Levintin, 2000). As we develop our common sense through a series of developmental events (n+1), we learn through being exposed
to elements of activity systems over time. Our understandings of the way society works are introduced in the social plane, through artifacts that we use to make sense of the world. Remember, artifacts are the “constituents of culture” (Cole, 1998, p. 292) and are both material and ideational. They become ideal in the way that the material’s forms and functions are reified through daily practices and in the value and ideation that are attached to the use of the artifact (Cole, 1998). Of import, all artifacts have embedded values, norms, and histories associated with them. Common sense notions are an extension of mediating artifacts that have over time become normative. Common sense notions emerge through mediating artifacts as we engage in activity systems and over time become reified in rules, norms, and the division of labor. This interaction, movement, and congruence across the activity theory elements display the way that common sense is constituted and reconstituted.

Through the use of the activity theory triangle as a visual heuristic (see Figure 2, the congruence across the triangle elements becomes evident. For example, the informal and formal rules and norms accrued by the students foster a common sense understanding that the *physical positioning* of a student is important. Through students’ positioning of their bodies, students show the teacher they are learning, demonstrating the way the rules and norms bleed into the division of labor; where the role of the students is to position themselves physically to demonstrate learning and the role of the teacher is to “stand in front of the room” and “tell the students content.” Since the role of the student is to demonstrate the receiving of knowledge, the rules and norms of learning as static and having an endpoint are again reaffirmed. As pointed out by Alice, “either you get it or you don’t.” Common sense notions of *acting* learning are further perpetuated by the mediating artifacts. In this case, as pointed out by Cain, successful was taking photos and notes to show progress toward the goal of completing a project.
Figure 2. A representation of the congruence between elements in activity theory.

These placeholders as proxies for learning as discussed in this section demonstrate the common sense understanding that learning is tied to the ability to do and act school. The use of activity theory to emphasize the common sense elements described by the placeholders demonstrates also the privileging of formal school-based knowledge. The rules and norms and division of labor are reified by mediating artifacts that perpetuate an understanding that only knowledge learned in formal settings is legitimate.

The affordance of understanding common sense in this CHAT perspective is that the hidden or informal rules and norms can be made explicit. Further, as educational designers we can work to create Change Laboratories (Engeström, 2008; Gutiérrez & Vossoughi, 2010), a space for reflection to decide if we want to accept these common sense notions as our “truths.”
will return to this in the following chapter; however, right now I want to use another set of student examples to describe further the way that although each student has a unique story, there is congruence across activity systems.

**The Persistence of Adult-Led Practices In and Out of School**

In the following section, I highlight excerpts from Daina’s, Erin’s, and Loren’s self-reflections to demonstrate the persistence of common sense notions of learning, both in and out of school settings, that privilege adult-led practices. As mentioned earlier, 17 students stated they had not systematically defined learning, suggesting that their working definitions of learning were largely grounded in their participation in their daily environments in multiple contexts. Daina and Erin fell into this category of not having defined learning explicitly prior to class, which I coded as assumed learning. Loren was part of the remaining six students who stated they had thought about learning prior to class. I struggled to categorize her, like the other remaining five, because she had stated explicitly that she had thought a lot about learning prior to the class, so she did not fit in the group of 17. However, she also expressed a shift from reductive notions of learning to more robust notions including the co-construction of learning. This is important because it further provided evidence of the way that, even though Loren felt she had done a lot of thinking about learning, she was engaged in multiple settings that physically looked different but left her organization of learning still undergird with an adult-led philosophy. Below, I describe the congruence of CHAT elements in both in school and out of school settings.

**School derived common sense.** I highlight two brief excerpts that shed light on the implied role of the individual in the classroom. Both examples were derived from participation in formal school settings. The first excerpt is from Daina, who succinctly and explicitly articulated her understanding of learning. She wrote, “Prior to this class my understanding of learning was
limited to the traditional model I had grown up in. I understood learning as an individual accumulation of knowledge and facts.” In this quote, she articulated common sense at work. Her understanding of learning was defined by her participation in school activity systems over time. Daina made explicit that learning was an “accumulation of knowledge and facts.” This language, similar to the act of doing school, solicits learning as closely aligned with the banking model of education, where the student is a receptor of information. Second, Daina communicated explicitly that she understood learning was an individual effort. This understanding of learning as individualized can also be seen implicitly in the previous section, where it was the role of students to demonstrate through their positioning that they were learning.

Similarly, Erin alluded to the individual role of the student in learning. She wrote:

From middle school until late high school when I entered a private preparatory boarding school my junior year, I had a very defined idea of what teaching and learning was supposed to look like and how I was supposed to be as a student so that I could fit into how they were teaching. (Erin, Self-Reflection)

Erin, in a more implicit manner and through the use of I, supported Daina’s claim of understanding learning as an individual student responsibility. Also, like Daina, Erin couched her understanding in her experiences in school settings. Understanding learning as an individual effort, as I go into more detail below, can create a susceptibility of the student to be blamed for not being able to obtain the necessary information, which sets up the potential for deficit perspectives of the student (Valencia, 2011).

**Out of school derived common sense.** Common sense, as an extension of dominant ideology, is a powerful concept because common sense is unconsciously present in many settings, including out of school contexts. In this section, I highlight Loren’s excerpt below because she discussed adult-led practices and how these practices were also present in nonschool settings. Loren had previously worked for an after-school program, summer education program, and
outdoor education camp. In the following self-reflection excerpt, she made sense of the rules and norms, artifacts, and division of labor in the various learning environments in which she had participated. She also discussed the way she recognized that, despite each site having had a different look and physical positioning, the underlying actions were still modeled after an adult-led model.

I have noticed that all [of the sites] have similarities in their structure and preconceived notions of learning. First, there is clearly a strict division between student and adult. As the adult, I lead the lectures, instruct the activities, and so forth. However, the outdoor camp does seem to blur the boundaries of adult and student at first glance. For example, students and adult counselors sleep in the same cabins, do all activities together, and eat meals together. But I’m not convinced that this is really to eliminate the dichotomy and create a community, but rather, just a necessary structure for student discipline and safety. Second, students are encouraged to [take notes], and tests are administered to ensure that students get the correct answer. Even in a project satellites class, students are required to meet certain checkpoints at certain times. Basically, both consider product over process.

In contrast to these ideas are those taught in this educational psychology. The first concept we learned was Barbara Rogoff’s Community of Learners, which describes a community based classroom structure focused on participant expertise and role shifting. It works to eliminate the teacher student dichotomy often brought on by the teacher structured settings, which I have been involved in over time. It was difficult for me at first to understand how the community of learners would work [emphasis added]. (Loren, Self-Reflection)

Loren, similar to Daina and Erin, understood learning through her life experiences and participation in various settings, building a stronger case for the connection between common sense and participation in society, explicitly the common sense notions around learning and teaching. In this excerpt, Loren made two explicit claims.

The first claim was about the division of labor. As the adult, Loren was responsible for leading sessions and activities as well as for enforcing the rules. Interestingly, Loren looked at the intent behind the actions to describe the division of labor, learning in the class that physical positioning did not automatically change the underlying philosophy of learning. I argue this is not only Loren’s description of the site but also of her common sense. In the last sentence of her
excerpt above she wrote that initially it was hard for her to understand how a community of learners would work. As she continued writing beyond this excerpt, she described the way that she changed her approach at these sites, signifying that prior to this class she was operating in an adult-led common sense manner based on these assumptions.

In her second claim, Loren wrote about the mediating artifacts—note taking, tests, and checkpoints—that drove learning assessments. The artifacts reinforced the idea that learning was getting the correct answer. Of import, the use of assessment and culminating projects alone did not reinforce reductive notions of learning; in fact, they can complement a learning environment. However, in her statement, Loren shared that in her interpretation, the artifacts were being used in a way that led students and staff to believe that learning meant having the correct answer and that the products (the measurement of learning) was being privileged over the process of learning.

Through understanding the composite and implicit messages accrued through each student’s unique experiences, I started to create a picture of a collective activity system that demonstrated the normative, often unexamined, practices that students carried with them and could reproduce in their own practices. This collective common sense is the interaction between the individual and the social and necessarily interrelates individual common sense with the dominant ideologies of the society.

Common sense notions, however, do not emerge until they are challenged or a tension arises around them, thus creating the opportunity to recognize the need to examine an idea or practice. Daina and Erin moved between grades, classes, and schools and created multiple activity systems in which they participated. The lack of tensions, or the congruence of the elements of CHAT, across these settings was evidenced through the students’ assumptions about learning based on their understanding of what constitutes a teacher and by extension a learner.
This does not mean every activity system was a traditional adult-led model, but enough commonalities were replicated to not create a consciousness, or alternative notion, around a different view of learning. In a similar way, Loren, who had thought about learning before and was engaged in various learning environments that tried to push against an adult-led approach, still fell into many of the trappings of this philosophy of learning. Common sense is powerful in its ability to be a camouflaged carrier of dominant ideologies—ideas and practices that remain because they are part of everyday practices that are not examined.

**Enactment of Common Sense**

I have described the interlinked and complementary common sense notions around teaching and learning. In this section, I provide an example from a class interaction as a way to demonstrate how common sense was acted out in daily situations as a way to triangulate the self-reflections (Denzin, 1978; Mathison, 1988). During the third week of class, the first response to reading—a one-page response to a prompt for each article to be written prior to entering class—was collected. The aim of the activity was not to articulate a perfect understanding of the article. Instead, the response to reading was an entry point into the reading, a space for sense-making. This developmental approach was discussed explicitly when the responses to readings were introduced to the class the previous week. The instructional team explained to the class that responses to readings were not supposed to be a summary, but instead, we were looking for a “thoughtful response” (Week 2). The written instructions for the response to reading can be found in Appendix F. During Week 3, when the instructional team collected the response to reading, Lea, one of the undergraduates, asked in a whole group setting, “for the two that are collected and graded, what if you really do a thoughtful job, but you kind of missed the concept?” Lea’s question can be interpreted in one of two ways.
The first possible interpretation is that Lea was worried that she responded carefully and with thought, but perhaps her understanding was not “correct.” Melina, an instructional team member, responded to this question by reiterating that we want you to “wrestle” with the ideas more than get a “perfect answer.” Colleen, another undergraduate, had a follow-up question to Lea’s question, “If you would have collected mine on Monday, I did try and I tried to understand it, but after class, realized my understanding was a little off” (class discussion, Week 3). To this comment, the instructional team responded and reiterated that the design of the response to reading was a written place for sense-making, an initial throat clearing. The underlying assumption of the response to reading was that through discussions a better understanding of ideas would emerge after class discussions. However, both Lea and Colleen, through their questions, were double-checking to ensure that thinking through a concept was legitimate enough of a response, and whether it was okay that they had not initially written the “right” answer in their response to the reading.

The second possible interpretation of Lea’s question is that she was asking the question to gain a better insight into the grading process. This alternative analysis emphasizes how Lea’s concern about being thoughtful is not just about learning but on understanding how much missing a concept was going to influence grading. This analysis of the question is also supported by another student who, after the instructional team had finished explaining the response to readings as a process, asked if students would be notified which response to readings were going to be collected and graded. This suggested again concern for getting a good grade. Both interpretations of Lea’s question—not having a complete understanding of the concept and the concern about grades—are closely related. At the core, both interpretations underscore the implied notion that there is a right answer, and they will be judged based on their proximity to it.
The idea of having to have the right answer was also brought up after class during our instructional team meeting by Paul. Paul was an undergraduate student who had taken the course the previous semester and worked as a teaching assistant during the Spring 2012 Semester. During the instructional team meeting, the following conversation ensued about another undergraduate, Morgan, who asked Paul a question similar to the one that Lea had asked about getting the right answer.

Paul: I was not surprised when Miley asked, “What if we do the work but we don't get the right answer?” I said, “Well, that is okay.”

Melina: That is awesome, we are happy about it. She also asked me, “What if I didn't ask a question? In [the rubric] it says that one way of sense making is to ask a question.” And I was like there are a lot of ways to engage in sense making. . . So, yeah the work it takes to reframe. . .

Paul: In high school we are taught that once the bell rings learning stops. (Instructional Team Meeting, Week 3)

In this exchange, Paul demonstrates the pervasiveness of the students’ need to have the right answer by expressing his lack of surprise to Miley’s question. He also highlighted a point made above by Elain through the opening excerpt that learning is often conceptualized to occur only in formal spaces and confined by time (school day) and signs (bells) of when learning should start and stop.

Further, Melina, an instructional team member, described how Miley asked this question to both Paul and Melina, as if she did not trust Paul’s response that it was okay to not have the right answer. Further, Miley asked Melina if it would be possible to be thoughtful even if she did not ask a question in her response. This comment about asking a question underscores the formulaic understanding of learning and supports the common sense notions described above, that it is the students’ responsibility to demonstrate their learning by “fitting” into the environment and having tangible markers that show students’ engagement and learning.
With the tension emerging between learning and grades, I do want to recognize the importance of grades. Grades are needed on student transcripts for internships, various career opportunities, scholarships, and eligibility to engage in many settings. As a result, the concern for grades seems justified, natural, and common sense. The quick interactions about grades may seem like brief, perhaps unimportant, exchanges. However, these exchanges highlight an enactment of a much larger tension that exists in schools and the larger educational systems.

Through artifacts, such as university policies and practices, learning is being understood as something to be attained and proven. It is a measured element that can be proven through grades, tests, final projects, and even as discussed by Cain, through photos that prove that we are being successful. This can be problematic if grades and other forms of measurement are privileged over learning as a developmental process and the encouragement of curiosity.

In Figure 3, I have recreated the visual heuristic of the activity theory triangle to include the additional notions of common sense, in red, from Daina, Erin, Loren, and the classroom discourse. I have also added an element of the objective and the outcome to demonstrate the depth of common sense at work. The elements of a common sense notion of teaching and learning can lead to the object and the outcome, a more long-term object of the activity system. Thus, the object is the maintenance of reductive understanding of learning and a narrow view of the relationship between teaching and learning.
Figure 3. A representation of the congruence between elements in activity theory expanded to include in and out of school examples.

Notice that although each bullet and each element is slightly different, the elements are for the most part congruent and complementary. For example, the individual student is responsible for learning, and this is reified by the individual allocation of grades. Grades also reinforce the notion that students should demonstrate what they learn through tangible artifacts. This notion about grades and demonstrating learning, by extension, is marked by teacher student dichotomy or as Loren described, “There is clearly a strict division between student and adult.” The lack of tensions between the elements demonstrates the common sense notions that were at play for the students in the class were learned from their prior experiences and perpetuated the
narrow understanding of the relationship between teaching and learning. Through allowing the unexamined notions of teaching and learning to persist through common sense, the object and outcome of the activity theory triangle can unintentionally be the promotion and result of “doing school” over critical thinking and the susceptibility to the banking model of education and deficit logic.

These common sense notions described through the activity theory elements were susceptible to the implementation of the banking model of education, where students are viewed as empty vessels to be filled with knowledge. This inherently undermines the rich experiences that students bring with them. By understanding learning as only occurring in the classroom, everyday knowledge and students’ experiences are vulnerable to being ignored. The reinforcement that only the information and knowledge communicated by the teacher is legitimate can be detrimental to nondominant student populations from underrepresented communities who may engage in practices that do not align as closely with the White middle-class values perpetuated in school (Penuel, 2010; Rogoff, 2003).

The individual accumulation of facts places the responsibility for learning on the individual and thus also places the blame of not learning on the student. The common sense notion at work is that learning starts at the intrapsychological (individual) level. Although not automatic, the alignment between reductive notions of learning and individual student responsibility together can create a vulnerable space where performance is rationalized through deficit explanations. The deficit logic starts by blaming the individual for the failure to accomplish a task, which necessarily takes out the social in the learning process (Haney-Lopez, 2003; Ryan, 1971; Valencia, 2011). Deficit logic then consequently starts with wanting to fix the individual, as opposed to the reconceptualization of the learning environment. Thus, common
sense notions of learning perpetuate the idea that the blame for lack of learning is located within the student. This assumption underscores that learning is not primarily considered a socially mediated process, thus often the idea of redesigning, or re-mediating, the learning environment is not a primary concern. This is particularly important when the blame for not learning is further generalized to a community or group, such as students of color.

Through an intentional examination of the common sense understandings of teaching and learning, the common sense notions can be made explicit, and the intentional adoption or reimagining of the definitions can be made available to design robust learning environments.

Common Sense Notions About Culture and Learning

Similar to the way that students developed common sense notions about the relationship between learning and teaching through their participation in various practices, students also developed common sense notions about the relationship between learning and culture. However, where the relationship between learning and teaching was inextricably linked, the relationship between learning and culture was almost nonexistent. In the following sections, I discuss the way this disconnect between learning and cultural practices works to (a) normalize White, middle-class norms and (b) perpetuate culture as belonging to others.

Normalization of White American Identity Culture into Secluded Spaces

Throughout my childhood I explored “other cultures.” Each year in grade school we would have a **mini-curriculum** on Native American culture. In middle school I learned about the **“French culture” in my French class**, and in high school I learned about **“Mexican culture” in my Spanish class**. I dreamed about being an anthropologist, and would spend hours leafing through national Geographic magazines, *wondering what it would be like to live with people who had culture* [emphasis added] (Daina, Self-Reflection)

Daina was an undergraduate who proved to be a highly critical thinker and engaged in ongoing personal self-reflections. I will draw on Daina’s self-reflection throughout these sections on
culture because she eloquently and honestly examined her preconceived notions about culture prior to the class. In this particular excerpt, I want to draw attention to the spaces across time where Daina explained learning about culture took place. In the early years of grade school, she learned about the Native American culture in a mini-curriculum. In middle school and high school, her knowledge about French and Mexican culture was associated with her language classes. In all of these scenarios, across her grade school to high school education, culture was a class that was used to supplement her knowledge about other cultures. I argue that because she learned about culture in a segregated manner, the concepts of learning and culture were not understood as interconnected. Instead, culture was something that could be added onto class content. This claim was further supported by the fact that of the 15 students who mentioned culture in their self-reflections, 13 students described that prior to the class they had not conceptualized any connection between culture and learning.

The importance of understanding of the relationship between learning and culture was also described by Wilma who wrote:

Before this course, I had no idea of the role culture played in education. After learning about culture in learning as well as participating in a culturally diverse after-school program, I began to realize the impact it has. **Culture is the filter through which everything is taught.** That means bringing in different cultures creates a worldly view in the classroom, bringing experiences that no textbook, exam, or lecture can teach. Each child brings with him or her an idea of learning or life itself [emphasis added]. (Wilma, Self-Reflection)

Wilma made sense of learning and culture, through mediation, as the way everything was learned. Wilma saw culture as a filter that was the lens for the way students made sense of content and experiences. She also recognized the importance of bringing different perspectives into the classroom to access informal knowledge that otherwise would be excluded. Such artifacts were described in the previous section as an integral part of learning (e.g., textbook, exam, and
lecture). I argue, that understanding the integral relationship between learning and culture is one of the ways to help create practices that discuss, celebrate, and engage in a diverse set of cultural practices where culture is not defaulted to an “other” or racial and ethnic group. Similar to Wilma, Cain in his self-reflection also articulated his preconceived notion of culture and how it shifted during the course of the semester. He wrote:

Before this class, I would always associate the word “culture” to just the ethnic background of the person. But now I understand that one’s culture is an individual makeup of a person and their experiences with their friends and family, the traditions within those families, certain hardships, economic situations, learning differences, or the influence of someone who says they have learning differences, and so much more. I feel that this has been one of the most valuable things I’ve taken away from this class because it changes the way I interact with anyone of any age, let alone what this knowledge can do for me when I interact with the different cultures of my future classroom. I have a better understanding of not to jump to conclusions when working with children and not to limit any child I work with because of who I think they are. In addition, being able to understand that there are so many different things that make up one’s culture is an excellent way for a teacher to break down how to best relate to a certain student. I think that the best way to teach a kid, or even anyone, is to understand them as much as possible in order to get an idea of how they can best interpret a concept [emphasis added]. (Cain, Self-Reflection)

Cain, like Wilma and the majority of their classmates prior to the course, had not thought about learning or had conflated culture with race. Through their understanding that culture was part of everyday practices, both Cain and Wilma, came to understand that cultural practices were something that could be brought into the classroom on a daily basis.

The understanding that culture is something that is to be added to supplement the curriculum or only belongs in some classes or in a mini-curriculum aided in the perpetuation that culture and learning are not related and that anything that is not part of the mini-curriculum is part of the “normal” practices. This set of normal practices can lead to the normalization of White, middle-class values that are often privileged in schools (Penuel, 2010; Rogoff, 2003).
Further, such common sense notions can also create a susceptibility to “other” students of color. I discuss this in more detail in the next section.

**Culture as “Other”**

Throughout my childhood I explored “other cultures”. Each year in grade school we would have a mini-curriculum on Native American culture. In middle school I learned about the “French culture” in my French class, and in high school I learned about “Mexican culture” in my Spanish class. I dreamed about being an anthropologist, and would spend hours leafing through national Geographic magazines, wondering what it would be like to live with people who had culture. In Colorado the natives always brag “we don’t have an accent.” Just as I had grown up believing I didn’t have an accent, I also grew-up believing that I didn’t have a culture, because as an American, I was an individual [emphasis added]. (Daina, Self-Reflection)

To make the point of Othering, I provide an extended version of Daina’s excerpt. By understanding how culture was secluded to certain spaces, a more clear connection can be made on how through common practices, understanding of culture as belonging to “others” was developed. Through her experiences, Daina learned she did not have a culture and as a result she wanted to “explore other cultures,” like French culture, Mexican culture, and Native American culture. This led for her to, as she described, dream of becoming an anthropologist to live with people who had culture. This Othering and observing of others’ culture was also described by Daina’s peer, Jane, who wrote in her self-reflection, “I came to see how much of culture involves understanding and experiencing, rather than simply observing.” In this way, Jane’s prior assumption was also to observe culture. The notion that culture is to be observed and explored created a distance between Daina and Jane and individuals from nondominant backgrounds. This distancing is the foundation for the Other.

To make sense of Daina’s excerpt, I borrow from Deloria’s (1999) framework of Othering. Deloria theorizes the White American identity as an incomplete, unfinished identity that is defined by what it is not—in other words defined by the Other. As a heuristic to
understand the Other, Deloria described the use of the Other as a fluid movement along two major axes: positive and negative and another with a spectrum of the relative distance from the Other (p. 21). These quadrants exist in constant tension with one another, where the image imposed on the Other is decided upon by the need of the White American identity.

The potential of Othering is something that Daina recognized in her own self-reflection as a shift in her thinking in the class. She wrote:

It is dangerous though once differences are attributed to a group, and these differences are seen as stagnant. It is then that the “other” becomes alienated, and their personalities are frozen into a stagnant and foreign substance that leads to discrimination. This discrimination is often applied in the classroom sadly, because the teacher doesn’t cater to the individual needs of the child but views the solution to be an overarching application for all the children of that specific background or race [emphasis added]. (Daina, Self-Reflection)

Of import, the distancing between the Other and Daina, in this case, is being done also through a conflation of race and culture, a point that Daina explicitly made in her self-reflection, as to the generalization of traits as belonging to a specific background or race. Four additional students mentioned that, prior to the course, they too conflated race with culture. Thus, culture as the Other, and the conflation of race and culture, demonstrate the distancing that can occur between White teachers and students of color. Again this is not automatic, but as Daina pointed out the lack of understanding of the relationship between culture and learning can be enacted in a classroom through the alienation and the Othering of students of color.

This recognition in Daina’s thinking demonstrates the importance of understanding the relationship between culture and learning. However, I want to return and re-emphasize that the Othering as distanced from the self is complemented by the axis created by a spectrum of the positive and negative Other. In Daina’s first example of her preconceived notions prior to the class, she understood the Other as positive. This was demonstrated by her desire to learn more
about the Other, be it Native Americans, Mexicans, or the French. She fantasized about learning more about the Other. She wrote, “I dreamed about being an anthropologist, and would spend hours leafing through *National Geographic* magazines, wondering what it would be like to live with people who had culture.” Although the Other was a positive Other, this positioning is still problematic as it reifies a static notion where the idealized image becomes the “artifact” that is more valued than the actual people who comprise the group (Deloria, 1999, p. 29).

Likewise, a distanced negative Other also poses constraints to creating a robust learning environment. In the following example, I highlight some common sense notions that emerged during a class conversation. The following example took place on Wednesday during Week 7 when Professor Gutiérrez (PG), a guest lecturer, continued the discussion from the previous class about the importance of thinking about culture as cultural practices. More specifically, she discussed affordances and constraints of cultural practices. As she spoke to the class, a PowerPoint slide with the image of a Black male in a city setting was in the background. She engaged the class in the following discussion. Student responses are marked by UG, which stands for undergraduate student.

**PG (Guest Lecturer):** Underdeveloped notions of culture have led to stereotypes. That is one of the ways that culture has been misunderstood. If you were not informed as you are now about culture . . . looking at this picture what would you say about this picture?

Various Students: Gangster, thug, rapper, inner city.

PG: We are not censoring here.

Various Students: Drug dealer, violent, poor, lower class.

PG: This is how we attach practices to people. We make judgments. So we end up talking about these characteristics as their culture. What is problematic about it?

Student 1 (UG): We are stereotyping.
PG: And how are we doing that? There is a mechanism that we are using when we say, “I know about their culture.”

Student 2 (UG): Assuming.

PG: And what are we assuming?

Student 3 (UG): **Based off their race.**

Student 4 (UG): Also what they are wearing.

Professor Gutiérrez used hypothetical scenarios as a way to help students feel comfortable making explicit these assumptions where the students did not have to say these labels were what they believed. Because of this instructional move, I cannot claim here that these labels were the students’ common sense understandings of race and culture. However, I use this example to demonstrate the social cues that students have heard about a Black man in a city, for example, through their participation in the social plane. Thug and gangster are distal negative images that are examples of dominant ideologies that are present in the media, for example, about males of color (Yosso, 2005).

I want to revisit the way that stereotypes stem from, as professor Gutiérrez made explicit, the connection between the conflation of race and culture and understanding of culture as a static characterization that is inherent to a person. She explained that, “**We attach practices to people [and] so we end up talking about these characteristics as their culture.**” Through asking students what is problematic about this logic, students agreed that assumptions were being made based on a person’s race and what they were wearing. This is important because these assumptions can fuel cultural racism, which is stereotypes that stem from static forms of culture used to “explain the standing of minorities in society” (Bonilla-Silva, 2006, p. 28). Of import, the Other negative is a label that exists to explain and rationalize the distancing and the labels of inhumanity and inequitable conditions (Deloria, 1999).
The pervasiveness of common sense around culture and the Other can be further understood through the following section were I explain the use of American as a proxy for White, individual, and nonforeign.

**What Counts as American**

Deloria (1999) discussed the White American identity as necessarily unfinished and defined by the Other. This also was evident in the discussion on culture as the other, as well as the use of American. In the following section, I describe the way that, in relation to the Other, students defined American as an individual and as White and Nonforeign. Although American was not a central code, and only discussed in a few interactions, I want to highlight the use of the term as it resonates with Deloria’s framework. The use of the term American was also consistent with other literature about the use of American and its relationship with racialized Others.

**American as an individual.** Recall in Daina’s last sentence from the excerpt above, she wrote, “Just as I had grown up believing I didn’t have an accent, I also grew up believing that I didn’t have a culture, because as an American, I was an individual.” The common sense notion that American is an individual is strongly tied to the notion of meritocracy in the US (Bonilla-Silva, 2010). Further, the notion of American as an individual plays an interesting role in the ability to Other. To Other, the group necessarily needs to have a collective, often static, set of practices that are considered a trait of the group. However, by being individualized, the White American identity as an individual tries to avoid being grouped, while still allowing and being defined by the Others’ social categorizations.

As an individual, Daina saw herself as not having a culture, while simultaneously having a desire to explore Mexican culture, French culture, and Native American cultures, or groups with monolithic practices. Grouping and Othering across people can perpetuate monolithic views...
of any particular group, which can foster stereotypes. Again, the robust understanding of cultural practices necessarily seeks to understand both historical commonalities across groups as well as variance (Gutiérrez & Rogoff, 2003). This is important because the notion of cultural practices allows the individuals belonging to dominant groups to understand that they engage in cultural practices on a daily basis and also to cultivate an understanding that variance exists within groups as well. These, I argue, are important steps to challenging the Otherness that can occur with the conflation of culture and race.

American as a proxy for White and nonforeign. Embedded in the logic that American was by extension an individualized identity, the term American also emerges as a placeholder for White, middle-class cultural practices as well as American (and Colorado native) as a nonforeign, or native, body. The notion of American and nonAmerican became an interesting and widely used term during Week 7 when students discussed cultural practices in class. As I reviewed the content logs, I realized the use of American was potentially a move to avoid language around racialized terms, for example, White and students of color. For example, on at least three occasions, students used the term American as a proxy for White.

To demonstrate common sense notions around what the term American means, I draw on a class example in which Colleen responded to a peer’s comment and in the excerpt below is communicating her understanding of the concept cognitive reduction:

If there is an American student and American teacher and that teacher knows a learning style that worked for him or her, then they are going to teach it the same way. If there is an exchange student from like a Hispanic culture or another place, [the teacher] might try to put it more simply. It is like the cognitive, the term that is used in the article but really making it more simple than you are used to [emphasis added]. (Class Discussion, Week 7)

In this excerpt two common sense notions start to emerge. First, American is being used as a proxy for White. Second, American is a marker of nonforeign or a native to the United States.
The first claim about American being used as a proxy for White can be seen through Colleen’s move from American in the use of the first sentence to the change of the Other as being “an exchange student from like a Hispanic culture or another place.” As described by Deloria (1999), American is an unfinished term, as it is defined by what it is not. In this excerpt, American is the opposite of a racialized group or a foreign body.

In addition to White, American is also being positioned as a nonforeign or native body to the United States. This is an instance in which common sense is so deeply embedded in our actions and our language that often common sense notions are carried without the opportunity to examine them explicitly. I return to Daina’s excerpt, specifically her use of “native,” to further demonstrate American as native and the rationalization that can happen with the increased distance to the Other. In the first part of the excerpt she wrote, “Throughout my childhood, I explored ‘other cultures.’ Each year in grade school we would have a mini-curriculum on Native American culture.” In this sentence sequence, Daina used the term Native American to reference one of the groups who have culture and to which she does not belong. Notice the distancing of herself from the group Native Americans.

Compare this to a sentence toward the end of the excerpt where she wrote, “In Colorado, the natives always brag, ‘we don’t have an accent.’ Just as I had grown up believing I didn’t have an accent, I also grew up believing that I didn’t have a culture because as an American, I was an individual.” In this second statement, the use of the term native was appropriated and no longer considered the Other. However, the term Native now encompassed normalization of White American practices, including not having an accent and being an individual.

This subtle and unconscious move in using the term American as native has been documented elsewhere as racist nativism in which Whites are “perceived as native to the United
States and all other groups nonnative” (Perez-Huber, 2009, p. 709). With the distancing of the Other, and the use of American as Native, racist nativism has been used to “justify racism, discrimination, and violence committed against various groups of people throughout history” (Perez-Huber, 2009, p. 709).

Before I proceed to the next section, I want to highlight a tension that emerged within me as I wrote this analysis. Understanding that nondominant and dominant groups all have cultural practices is an important step toward rupturing static notions of race and culture. Like Wilma, many students discussed the importance of having students share their experiences in the classroom as a way to engage students’ cultural practices. However, without ways to continue to explain power structures and reflect on our bias, I felt there was potential for the powerful tool of discussing cultural practices to be reduced and misused to rationalize colorblind notions of culture (Bonilla-Silva, 2006). The constraint of this class, and many classes, is that it is only a semester long, and it takes longer than a semester to engage in an ongoing practice of understanding cultural practices as grounded in shared histories and to also embrace variance within groups. Further, as discussed in my limitations, this tension points to the need perhaps to centralize racialized practices more centrally in class. This tension is important because it highlights the power of common sense and its ability to be reproduced.

This common sense about culture as only belonging in certain spaces can lead to the incorporation of culture into the school curriculum through an additive approach. In Figure 4 I have made explicit the elements of the activity theory triangle around the common sense notions regarding the relationship between learning and culture.
In this section about the relationship between learning and culture, I have described culture as understood as a distancing of the Other, in both positive and negative terms, and I have described common sense notions of American as individualized, White, and native to the US. Notice that the lack of understanding of the relationship between learning and culture starts to shift as described by Colleen above, “culture is the lens in which everything is taught.” In understanding that culture is something in which all individuals and groups participate, the distance from the Other can become closer and more relatable. Understanding cultural practices is one of the ways to start to bridge the distance from the Other as it inherently necessitates a recognition that everyone has cultural practices. Further, the understanding of the experience between learning and culture provides a way to see the importance of integrating culture into all
aspects of education. This integration of culture and learning pushes on the notion of culture as static and as Othered.

**Pervasive Nature of Common Sense**

In this chapter, I have outlined common sense notions about the relationships between (a) teaching and learning and (b) culture and learning. Through the use of self-reflections and classroom discussions, I demonstrated the way that through common sense notions individuals may become susceptible to reductive notions of learning and culture, which can unintentionally perpetuate the banking model of education, deficit thinking, and the Othering of students from marked social categories, in particular students of color.

The use of terminology of common sense was an intentional theoretical selection for a couple of reasons. First, it has the potential to underscore the integral link of both individual experiences and dominant ideologies. Second, common sense as a term demonstrates the subtle ways we come to learn about learning, and culture displays how powerful common sense notions can reproduce power structures. As I conclude, I want to highlight three traits that Haney-Lopez (2003) described around common sense as important reminders and in preparation for the next chapter. First, everyone relies on common sense, so everyone is susceptible to perpetuating inequities through common sense. For example, common sense is not limited to White teachers only or teachers of color only. Anyone who participates in practices shaped by dominant ideology is susceptible to actions grounded in common sense. Second, good intentions are not a guarantee that equity work is being done. Good intentions without self-reflection, understanding of community, and humility can be counterproductive. Third, common sense is not easy to overcome, but awareness of the process of its development can allow for shifts in understandings (Haney-Lopez, 2003). This last trait of common sense is particularly interesting to me as it
demonstrates the importance of conceptualizing learning environments as a Change Laboratory, or social design experiments, where students and teachers can make explicit their common sense understandings. For example, through this process, learning can be reconceptualized as a fundamentally socially mediated process, which in turn changes the way roles and tools are used in a learning environment. With an explicit examination of the deeply seated common sense notions of teaching and learning at work in learning environments, it becomes possible to design learning environments that make individuals aware of the common sense notions they carry. In the following chapter, I look at the sense-making process that helped start to shift student common sense notions outlined in this chapter as well as design elements found in the larger learning ecology of El Pueblo Mágico.
CHAPTER VI

DESIGNING FOR MEDIATED PRAXIS

The undergraduates in *El Pueblo Mágico* entered the course with deeply held common sense notions about their future roles as elementary school teachers, what their classrooms would look like, and what practices they would need to be successful teachers. As elaborated in the previous chapter, prior to the start of class students held a range of common sense understandings of core principles of teacher learning, including what counts as (a) learning, (b) teaching, and (c) culture. As I observed, participated in, and documented undergraduate student learning across the semester, I had the opportunity to capture the ways participants in this setting shifted in their understanding of the larger enterprise of teaching and learning and how they put these ideas into practice through their actions. Further, I gained insight into the kinds of tools that mediated these shifts. The learning ecology was saturated with mediational tools and practices that provided ongoing forms of support to extend participants’ learning. Through participation in a range of practices, learners had multiple opportunities to develop new forms of expertise.

Through documenting and analyzing the forms of mediation and the shifts in participant learning, I examined how educators and researchers created a robust learning environment for all participants—the central focus of this dissertation. To address the research questions, I worked to identify central tenets of a social design experiment derived from Gutiérrez (2008) and Gutiérrez and Vossoughi (2010). Thus, I used the articulated tenets of social design experiments and identified how they were instantiated in the social practices of the *El Pueblo Mágico* learning ecology. The notion of a learning ecology stemmed from a tension that I experienced in writing about *El Pueblo Mágico* and reading about other Fifth Dimension sites. Many of these readings privileged elementary school student learning and more recently the undergraduate classroom.
As a reader, I often got the impression of a singular learning environment, or at the most two—the after-school program and the undergraduate classroom. In this dissertation, I have worked to demonstrate the way that the instructional team meetings were also spaces for deep learning. Further, the instructional team, and by extension the larger research team, the undergraduate classroom, and the practicum site all influenced, and were influenced by, the learning environments. Through my apprenticeship and work with El Pueblo Mágico, I have conceptualized El Pueblo Mágico not as a learning environment, but more so as a learning ecology. A learning ecology is a compilation of interlinked learning environments that are self-contained sites for learning. A learning ecology is linked through a common vision, theory, and goals as well as fluid movement across the boundaries of the learning environments. The term learning ecology underscores the interconnectedness of ideas and actions working together toward mediated praxis. In a learning ecology, each learning environment is a vital organ that cannot survive alone. In organizing for praxis across a learning ecology, theory plays a vital role. The theory is like the blood in the veins traveling across a body and helping it survive. It stretches from the research team, to the undergraduate course, to the after-school program. Without the blood (theory), the body cannot survive, but without the body (practice), the theory cannot live. The learning ecology necessitates the perpetuation of research, design, and redesign—this is the breathing in and out of the ideas and theories.

I have organized this chapter to examine how El Pueblo Mágico functioned as a social design experiment, and articulate three design tenets that collectively foster a learning ecology. First, as noted in the literature (Gutiérrez & Vossoughi, 2010), social design experiments draw from the principles of formative interventions, specifically Change Laboratories (Engeström, 2006). A Change Laboratory includes a “mirror,” space for analysis of inner contradictions, and
pedagogical imagination (Gutiérrez & Vossoughi, 2010). Second, I discuss how this design experiment involved “layered learning” in which novices (i.e., undergraduates) as well as instructional team members, who were positioned as more expert others, learned and researched “side-by-side” with one another (Erickson, 2006). Third, because learning in each setting of the El Pueblo Mágico ecology was designed to reinforce learning in the other setting, I also examined how certain artifacts functioned to reinforce the notion of learning as movement. In particular how boundary artifacts worked to connect, inform, and travel across the activity systems of the course—El Pueblo Mágico’s after-school practicum site, the undergraduate course, and the instructional team’s planning meetings.

Through examination of all three of these design tenets, I identified shifts in undergraduates’ assumptions about teaching, learning, and culture. I define “shifts” by drawing on the three principles of learning outlined by Cole and Gajdamashko (2009): (a) double-sided nature of development, (b) individual and collective learning, and (c) incorporation of school-based and everyday knowledge. Together, these principles helped me identify the various ways student learning was evident in daily practices and over time.

**The Classroom Ground in Change Laboratory Principles**

Empirical analysis of the undergraduate classroom affords insight into design for mediated praxis or the intentional organization to foster learning, reflection, and action. Recall learning necessarily includes both the acquisition of new knowledge as well as a rupture of old information (Cole & Gajdamashko, 2009), where the rupture of old can be understood, for example, as a challenge to common sense notions, as identified in the previous chapter. Awareness and rupture of common sense notions is a complicated and ongoing process that requires an intentional, tool saturated design. A principle of a Change Laboratory is the
conceptualization for change through reflection and identification of tensions (Engeström, 2010). This requires tools and the creation of spaces that promote transformative practices that (a) act as a mirror to create an awareness and examination of students’ experiences and perspectives, (b) foster students’ space and time to work through inner contradictions, and (c) offer a playground where ideas and tools can be explored, rehearsed, and used to imagine pedagogical practices that can transform future learning activity systems (Gutiérrez & Vossoughi, 2010).

In the following section, I draw on the three aspects of a Change Laboratory mentioned above—the mirror, space for analysis of inner contradictions, and pedagogical imagination—to provide examples of the Change Laboratory in practice. Through the examples, I also point to the ways students experienced shifts in their understanding of common sense notions about teaching, learning, and culture.

The Mirror

The mirror, the reflection through inquiry intended to create awareness of experiences and systems, is an underlying principle of the Change Laboratory used to examine common sense embedded in practices we learn through participation in society. The mirror is a heuristic to encourage students to recognize practices and common sense notions that can often go without systemic examination. Through the reflective practices engaged in the class, students came to understand that practices, ideas, and beliefs were socially mediated, yet remained unnamed. The act of holding a mirror up to students’ practices and actions sought to “strangify” daily practices and create a space where we could continue or adopt new, intentional, and conscious ways of engaging in our daily worlds (Gutiérrez & Vossoughi, 2010, p. 104). The idea of the mirror can aid educators in thinking about how to organize and introduce tools into the environment that help facilitate engagement in the sense-making process through the initial step of being reflective.
The function of the mirror became apparent in the Spring 2012 Semester through the multiple invitations by the instructional team to engage undergraduate students in examining their moment-to-moment interactions at site and in class. In the following class discussion, for example, Alexa, an instructional team member, provided an introduction of the cognitive ethnographies during a class discussion. I have selected this excerpt as it demonstrates the inquiry process that we asked students to engage in.

So kids and literacy, kids have an idea of literacy before school even begins and get formal reading instruction. They learn symbols, like target, logos, bedtime stories, so you want to make connection between these things. **So we have to as educators, learners get into this practice of being reflective and thoughtful about kids’ history and the way they are connected to community practices before their interactions with them** [emphasis added]. (Alexa, Class Discussion Week 4)

Alexa asked students to think about the way that learning and literacy is always happening and stated that it is the role of the educator to be reflective and intentional about understanding kids’ histories. Through this instructional team prompt about the cognitive ethnography, Alexa was setting a foundation and expectation for the undergraduates to engage in reflective practices. I highlight this example, not as an exceptional moment, but instead as an ordinary prompt that was representative of the instructional team expectation to be reflective as a practice of the class.

Another example occurred as part of the video analysis group project introduction in which students were asked to document in detail interactions between participants. Melina, another instructional team member, eloquently stated that we, the instructional team, were asking students to “hone your eyes to what is happening at site” (Week 3). In essence, the reflective practices were encouraged through both assignments and the instructional team prompts.

The instructional team prompts were interwoven with the tools embedded in the course in ways that were intended to create reflection through inquiry. In the remainder of this section, I
highlight three different occasions where a combination of tools were present as students made comments demonstrating their own awareness of labeling students.

The first example takes place over a small group discussion about cognitive ethnographies (CE). CEs were another tool that facilitated the creation of the mirror on a weekly basis. The undergraduate students completed a total of six CEs during the course of the semester. Each CE included five sections that students had to complete—participant details, general site observations, narrative, summary of tools and assistance, and reflection/analysis. Each section was designed to focus on soliciting different ways of processing the moment-to-moment learning of both the undergraduates and the children. For example, the narrative was a space in which to write a summary of the program’s activities through a low inference lens. Interpretations at site that were higher inference, or included opinions, emotions, or global comments, were separated out of the main narrative and placed in the observer comments (OCs). This separation between low inference observations and opinions acted as a tool in which students had to document why they made their assumption or claim and also recognize their assumption.

Below, is an exchange that happened during a small group discussion between Alexa, an instructional team member (IT), and Maggy, an undergraduate student (UG) that exemplified the tool in use.

Maggy (UG): So I realize that I label kids and why are they doodling, and like, what do I need to do instead of saying that? What do I say?

Alexa (IT): So say you are here right now . . . Stop yourself and think what are they really doing and describe what you are seeing. And then in parenthesis say I don't think they are on task because . . . and then you can talk about behaviors. (Small Group Discussion, Week 8)

In this exchange, Maggy recognized that she was labeling students and making assumptions about what they were and were not doing. This recognition is an important step in shifting an
action to a more conscious practice. Maggy then asked Alexa how to better write her CEs. Alexa reminded Maggy about the observer comments that allowed for higher inference statements. She told Maggy that when she found herself labeling a student to stop herself and write *I don’t think* they are on task. This separation of low and high inference statements at first glance seems minor; however, through this action, Maggy became aware of her own common sense notions of what is considered on task and off task behaviors and reoriented her attention to what was actually observable. This process of asking students to separate out assumptions from what they are observing was also helpful for the instructors, who often through their feedback prompted students to make the separation of low and high inference statements and were able to ask students variations of “how do you know?” signifying to the undergraduates that they needed to make observable statements or recognize the assumptions embedded in their narrative.

The following class example happened 2 weeks after Maggy and Alexa’s exchange. This large group discussion about the role of CEs emerged from the undergraduates’ perspective as having aided their recognition of their use of labels. In the excerpt below, Melina brought the class back together after a small group conversation.

Melina (IT): What else came up in your conversations?

Jennifer (UG): We talked about how the CEs are so important in **framing your thinking, and the way that you look at other students**, and how the troublemaker and how your state of mind, there is a place to work through these issues, or not issues but how to re-mediate your understanding.

Alexa (IT): So maybe not issues, but I do think of those as **problems of practice**.

Jennifer (UG): **And language too, like tagging kids with those words is a little problematic.**

Alexa (IT): So right now the CE becomes a tool for you to re-mediate your understanding. (Class Discussion, Week 10)
Jennifer made explicit the two roles the CEs held for her and her group members. First, the CE was a tool that helped her create awareness around language that was being used to label kids. She identified the problematic nature of “tagging kids with those words.” In this way, we see the CEs acted as a mirror for Jennifer in a similar way that the CEs were a mirror for Maggy. Second, Jennifer made a connection to the way the CEs also played a role in her learning and helped remediate her understanding about learning and allowed her the space to work “through these issues.” I will return to this space to work through issues in the section on tensions below, but I want to highlight the way that through providing a mirror, students had to engage in self-reflection, which created tensions that needed to be worked through.

Similar to Maggy and Jennifer, Jenna came to a similar realization about what student participation could look like through her reflection on her experiences in the after-school program. She articulated this realization in a large group discussion in which students shared their responses to a mini-assignment, which was a 10-minute free write sense-making activity designed to help them make explicit connections between learning at the site and what they were learning in class. Jenna stated:

*I didn’t write about it, but I had something similar to that. I wrote about my favorite day. We were designing frogger and . . . there was a kid was just like totally not paying attention and he was drawing* and I was just going to let him do it because everyone was talking. *It turns out that he was listening to everyone’s ideas and drawing everyone’s ideas on this piece of paper* and drawing out a game and how it could go. There was an ice cream truck and aliens and it was so cute [emphasis added]. (Jenna, Class Discussion, Week 12)

Jenna assumed that the child, who was engaged in drawing, was not “paying attention.” She later learned, however, that the child was not only paying close attention, but was actually actively listening and engaged with all of the ideas, thinking about how the ideas overlapped and developing a plan on “how [the game] could go.”
Jenna, Maggy, and Jennifer demonstrated how recognizing and reflecting on their moment-to-moment interactions around learning created a mirror that helped them recognize assumptions they had made about students that were not empirically derived. As described by Gutiérrez and Vossoughi (2010) and Gutiérrez and Orellana (2006), through finding ways to recognize our common sense notions, we can then create “the distance [awareness] to decide if we are comfortable with our own assumptions, their histories, and their implications” and consequently make “deliberate decisions” about our actions (Gutiérrez & Vossoughi, 2010, p. 104).

I want to draw attention to another important, but perhaps not as visible, point in Jenna’s comment. Implicitly, Jenna provided a rationale and example of why it was so important to design a Change Laboratory that was saturated with tools. This saturation created multiple points of entry into the learning environment for each class and over the course of the semester. In Jenna’s example, her student was afforded the opportunity to draw and through his access to tools (i.e., paper, pen, and ultimately his drawing) was able to find a nonverbal way to enter and move from a peripheral participant to occupy a more central role in the game design activity. The uptake of these tools demonstrated the importance of making available a range of tools for the learners.

In a similar way, I want to highlight Jenna’s entry into the larger class discussion. Jenna started her statement with, “I didn’t write about this, but . . .” Jenna too had multiple tools and points of entry into this sense-making space. She engaged in an individual free write, small group discussion, and large group discussion; however, the comment that is quoted above was generated in the large group discussion when another student’s comment sparked her memory. She stated, “But, I had something similar to that.” This is important as not only were there
multiple points of entry into recognizing her own learning, but this statement provides a small glimpse into the collective nature of learning, where Jenna was building off of a peer’s comment.

Notice in this section that all three of the examples provided have a similar theme of becoming aware of, and seeking alternatives for, labels assigned to students, yet they all happened in different weeks and via different mediums: small group clarification about CEs, large group discussion about CEs, and large group discussion spawned by reflective writing. Further, the instructional team prompts about the importance of making sense of moment-to-moment interactions with the children were introduced as early as Week 3 and Week 4. In the figure 5, I depict the series of events discussed in this section and the tools that were present to demonstrate the developmental learning process necessary in the creation of a social design experiment. Further, I want to highlight the way multiple tools were present during these interactions and demonstrate the frequency across the semester where these small interactions took place.

In Figure 5 each prism represents the undergraduate class. I selected a prism for a couple of reasons. First, it is the two dimensional shape traditionally used to represent an activity system. Second, in trying to depict the image of the mirror, as initially described by Engeström (2010) in the Change Laboratory, Professor Espinoza brought to my attention that perhaps the class was not as much a reflection as a refraction. A light that travels into a mirror reflects an image. This is helpful as such reflecting provides distancing and “strangifying” to create the potential of awareness through the image; however, the image does not change. I found that in looking at a social design experiment, the “mirror” functioned more as a prism. When light travels through a prism the single ray of light can become a rainbow. This refraction of the prism is more fitting with praxis since through reflection there is a change in action, a change in the form of the light.
The design of the *El Pueblo Mágico* is to aid in refraction, or praxis. Like a prism, a single ray of sun flows into the prism and sunlight exists as a rainbow in a more complex visualization of the sunlight. Each class was like a prism in the sunlight that produces a rainbow. The mirror—the mediational tools—helped create a new way of seeing and observing. Further, this metaphor also serves the purpose of making more apparent the nonlinear process of learning.

In the figure 5, the number above the prism is the week in the course in which the exchanges were documented. Each prism in the background represents a week that has not yet been mentioned in this chapter. Below each prism is a box that lists the mediational tools that were mentioned in this chapter. Each line depicts the way each tool created a point of entry into the class. The line representing the mediational tools introduced crosses over into the remaining weeks as true to the developmental process of learning, the mediational tools may not be unraveled until a later point in the semester.

*Figure 5.* Representation of mediational tools introduced to facilitate refraction.
Inner Contradictions

Inner contradictions are another principle of the Change Laboratory that is in constant interplay with the mirror, and together they contribute to transformative learning. I have only separated out the aspects of a Change Laboratory for the ease of reading. In the conceptual framework, I defined one key component of learning as the double-sided nature of learning, which entails both the acquisition of new knowledge—new level of awareness—as well as learning as a rupture of old knowledge—challenging and making sense of common sense notions in the face of new information. This idea of inner contradictions could be illustrated as images of crashing activity theory triangles, as a metaphor to illustrate the tensions that may arise as students engage in two activity systems. One of the triangles could be the activity system of common sense notions I laid out in the previous chapter. The other triangle could be the theories and practices of the undergraduate classroom in which students were asked to hold another possible truth about learning and culture. The inner contradictions—the crashing of the triangles—I argue, arose as students reflected on their common sense notions through the mirror, while at the same time being introduced to new concepts that countered their common sense. Of import, the contradiction did not immediately become evident in the language of the students but did become visible as students examined moment-to-moment interactions.

As described by Y. Engeström (personal communication, September 23, 2013), “Learning works to master not skills, but some unknown form of transformation”; and through working toward a transformation, the reconciliation of the crashing triangles where a level of consciousness is applied to action, necessarily engaged a developmental process. This period of reconciliation can be uncomfortable and should be an ongoing process. In the rest of the inner contradictions sections, I provide two examples of students working though notions discussed in
the previous chapter, the relationship between (a) learning and teaching and (b) learning and culture. I conclude by describing the importance of the development of a tolerance for ambiguity and how it is necessary in the learning process.

**Inner contradictions: Learning as change in participation over time.** The understanding of learning as a change in participation over time is central to the design of a social design experiment. In this way, the social design experiment seeks to make visible tension in a productive and generative way and thus, provides spaces for students to struggle with a sense of confusion. For example, the common sense notions of the division of labor described in the previous chapter drew sharp distinctions between the student and the teacher roles. This is in contrast to the co-construction of learning and knowledge in a community of learners (Rogoff, 2003), where teachers and students are working together and sharing knowledge. Since common sense knowledge is so deeply ingrained that it is not recognized, common sense notions can be held simultaneously with newer notions of learning. However, through the use of different mediational tools, class activities, and the application of theory students started to feel a tension between applying the distinct ideas. In the example below, I describe how inquiry and reflection based mediational tools served as a mirror for students and made inner contradictions evident to me; however, not yet recognized by the students.

The following event took place during Week 5. At this point in the course, students had completed their group video analysis of the social organization of a classroom presentation. For this assignment, students were asked to select between two classroom videos and analyze the video in order to understand how learning environments come into being. To do this, they were asked to create a content log of the entire video and select a key 5-minute segment, which they transcribed and analyzed using theory discussed in class (Week 2 and Week 3 instructions). The
student group that I draw upon in this example of inner contradictions was comprised of three undergraduates: Cory, Linda, and Wilma.

The video the group chose was Shea’s Number, a video that took place in Dr. Deborah Ball’s elementary classroom. Dr. Ball was a senior researcher interested in key problems of practice in the teaching and learning of mathematics. In the video of early teaching, the elementary students were learning the meaning of even and odd numbers. In the video, one student was trying to make sense of even and odd numbers through the grouping of pairs of numbers. Through this logic, the student claimed six was an odd number. During this explanation, another elementary student approached the front of the class and explained why this logic did not work. This exchange was the origin of a class discussion about what is an even and odd number. Dr. Ball was in the back of the classroom and did not interject her thoughts during the student conversation. Instead, she allowed the students to put forth their explanations of how they arrived at their claims about the even and odd numbers.

During the undergraduate group presentation of the video, Wilma, Linda, and Cory presented their analysis. During the group presentation, Cory said, “It was really productive. We thought the kids were getting involved; everyone was getting involved with their own opinions and saying what they had to say.” Cory’s group members echoed this idea of the importance of engagement. They also felt the teacher, Dr. Ball, was actively listening and by not interjecting, created a space for the students to bring in their expertise. This group’s members were starting to see the potential for learning and engaging students in a community of learners. In this overview of the presentation, it became evident that Cory, Wilma, and Linda were able to recognize the way developing a community of learners, through shifting expertise to students, allowed the students to become engaged in the classroom conversation.
Toward the end of the presentation, however, as the group started to wrap up their comments, Wilma and Linda expressed a level of discomfort that they felt in watching the video.

Wilma (UG): One thing that I didn't like, or none of us particularly liked, is that it got carried on a little too far without her instruction or her telling anyone what was wrong. That was a good thing for most of it but that was confusing for the kids that didn't have prior experiences with even and odd. I think it would have confused them a little more. It could be a good thing or it could be a little negative.

Linda (UG): I know that if I was a kid in the end of the class I would have been confused, so we thought that the teacher should have intervened. (Class Discussion, Week 5)

Wilma and her peers discussed the way that they felt the conversation carried on too long and had the potential to foster confusion in the class. This observation by the students allows for me to bring up two points for interpretation. This sense-making revealed a remaining tension between what the undergraduates were learning and their common sense experience about classroom learning. For example, at the core of the tension was the desire to have students attain the right understanding without allowing them to be confused for too long. Wilma stated that the instructions went on “too far without the teacher’s instruction or telling anyone what was wrong.”

Second, as declared by Linda, the teacher should have intervened. I argue that Linda’s belief here is that the teacher not only has the right answer but also the ability to explain the concept in a way that could be understood. The exchanges in this presentation serve as an example of the way students had to make sense of the inner contradiction—the tension between the theoretical understanding of the space needed to foster student engagement and the idea that students should have the right answer without too much confusion. The students played with this inner contradiction as they tried to figure out “how long” the teacher should have let the child-led space exist.
This inner contradiction between two sets of ideas about the classroom demonstrated the ambiguity that the undergraduates had to negotiate. Although at the moment they were not yet able to articulate this experience as a tension. In the moment, it was more of a sense of frustration or something they did not like. However, as an observer, I claim this is a point of tension because of the two potentially dueling articulated perspectives about the video. I argue they did not recognize they were experiencing this tension because at the moment they were working through the inner contradiction. This process is similar to being able to talk about common sense only after it is recognized through shifts. This sense of inner contradictions was routinely experienced by the undergraduates as they made sense of learning as a developmental process in a similar way to the elementary school kids who were making sense of even and odd numbers.

The group members were not the only ones who experienced and navigated this space of ambiguity or inner contradictions. In the following excerpt, Lea worked through, and wrote retrospectively about, a similar tension to the one demonstrated by Cory, Linda, and Wilma. Lea wrote:

*I think the biggest impact that this class had on me was to turn my notion of how learning works upside down . . . the notion of a community of learners was even more unfamiliar to me [than child run]. Again, as we learned about it, I understood the concept but did not actually think that it was a widely used phenomenon. I remember the moment that my comprehension of and appreciation for this concept really clicked for me – it was during the video analysis project. When we watched our video, *Shea’s Numbers*, for the first time, I recall feeling very anxious about what was going on in the classroom. I felt like shouting at the teacher to just tell the kids the damn answer already. I thought she was wasting time by letting the students talk it out, especially since not all of the children seemed focused on the activity. I discussed my thoughts with my group members and finally came to the realization that in this video we were seeing a true community of learners at work. The teacher in *Shea’s Numbers* was taking a step back from traditional instruction and was allowing the students to discuss and argue their viewpoints. She was allowing them each a chance to take turns in the expert and novice roles within the dialogue. It was at this moment that I was really able to fully*
understand the community of learners by actually visualizing it [emphasis added]. (Lea, Self-Reflection)

Lea expressed how in the course, specifically through the video analysis project, her understanding of learning was turned “upside down.” She further described how she understood conceptually the idea of a community of learners. However, the inner contradiction emerged as she watched the video of Shea’s Numbers, the same video that was discussed by Cory, Linda, and Wilma. In her candid reflection, she described how she wanted the teacher to “just tell the kids the damn answer already.” Again, the common sense notions of the teacher having the right answer emerged—a view in which the students are receivers of information and that confusion is uncomfortable. I highlight the above-mentioned example of inner contradiction because these tensions, similar to contradictions in activity systems, are potential places of growth and deep learning. Of course, not all confusion is good confusion, but I do think this inner contradiction should be recognized as a central and natural part of teaching and learning.

In Figure 6, I expanded upon Figure 5 described above and enlarged the prism to represent Week 5. The blue triangle inside of the prism represents the common sense activity system described in the previous chapter and the red triangle represents the new assumptions and theories of learning that were being introduced in the course. The point of tension I argue the students were experiencing is depicted by the knotted line stemming from the mediational tools, as the students used these to make sense and apply theory.
**Figure 6.** Representation of mediational tools introduced to facilitate refraction with a focus on Week 5.

**Inner Contradictions: Culture as part of our everyday learning.** Another example of an inner contradiction that emerged during the class discussions was a tension between (a) understanding culture as a static notion in which culture is conflated with race and a source of Otherness and (b) the understanding that culture, cultural practices, and mediation are part of everyday learning and experiences. I draw on this example, as a way to demonstrate the process of the shifts around common sense notions described in the previous chapter.

The following conversation occurred during Week 7, the week that we discussed the concept of cultural practices. The students had already submitted the week’s responses to reading for the Gutiérrez and Rogoff (2003) article assigned to explain the notion of cultural practices. Class started with a large group discussion and a prompt by an instructional team member who asked the class: Prior to the reading, what were your understandings of culture? To this question, Bailey replied, “In seventh grade, we defined it by seven aspects of culture,” which included: religion, language, family, government, food, and entertainment.” She couldn’t remember the last category (class discussion, Week 7). Bailey had been taught formally that these different
aspects make up culture. Although this list is a start, the definition can perpetuate culture as static, and unchanging and to a certain degree reifies a monolithic perspective that does not allow for variance in groups. As the conversation continued, another student, Maggy, expressed, “It is hard to know a culture if you are not a part of it.” These comments reflect the kind of common sense notions about culture discussed in the previous chapter.

After this throat clearing activity about students’ previous understandings of culture, each member of the instructional team, myself included, presented an overview of the concept of cultural practices. I discussed the shifts in practices in my Mexican family over three generations. After this, students formed into small groups where they discussed their responses to the readings and any conceptualizations of readings that had changed since our class discussions. When students were asked to share summaries of their small group discussions, Seth volunteered the following comments that he and his partner Bailey had discussed:

Even though there was a specific question that you guys presented to us for the reading response. It was more of us like us trying to work through what is culture. We were being hard on ourselves because we were looking at where we were coming from, because after our discussion and working through it. She [Bailey] felt like she read it the wrong way. (Bailey, Class Discussion, Week 7)

Even though the prompt was soliciting any changes in students’ conceptualization of culture, Baily and Seth lamented that they had not had the right answer; as a result, they were hard on themselves. Again, the inner contradictions they were experiencing between their common sense notions and new understandings came to light through the contradictions that were made visible for them in their discussion. It was not an expectation of the instructors or more specifically of the prompt to have the right answer.

Alexa followed up on the comment with a clarifying question and the following conversation ensued:
Alexa (IT): So now I have two questions. First, what does it mean to approach the article the wrong way? And second, what would you have done differently knowing what you know now?

Bailey (UG): I mostly wrote about learning styles instead of cultural practices because that is what I understood more. The whole point of reading the article is to break it down a little bit.

Alexa (IT): I agree with you, that is what learning is—so you wrote about learning styles because that is what is comfortable. Do you want to respond to that? [Gesturing to other student. Other student declines.]

Erin (UG): We have to be careful not over generalize even in these response. If we went back to it now, and we had these conversations to think about it, we wouldn't have come to it with a static mindset.

Bailey (UG): So that is exactly what I was thinking about. (Class Discussion, Week 7)

In the first exchange of this interaction, Bailey stated that in her response to the reading, she mostly wrote about learning styles because she was familiar with the term. The first half of the article addressed learning styles as a critique of the way learning styles can actually reproduce narrow notions of teaching and learning and foster the understanding that learning is a trait inside the individual. Bailey thought she read it wrong because she focused on her understanding of learning styles, which was not a critique. Erin emphasized this point when he stated they would not have approached the notion of cultural practices with such a static mindset if they were to do it over again.

Bailey and Seth’s conversation became the foundation for a productive sense-making space that emerged and demonstrated the possibilities of collective learning. Bailey’s and Seth’s admissions, their working through not having the answer, and their approaching the terms culture and cultural practices with a static mindset spawned a new conversation about the relationship between learning styles, learning, and mediation. After the exchange in the classroom above,
Alexa reiterated that this was a learning process, and that she too learned something new every time she reread the articles. Following this response, the following exchange occurred.

Maggy (UG): It is like you can't categorize someone by their culture and you can't categorize someone by their learning style either.

Alexa (IT): So what do you guys think?

Cain (UG): Yeah totally, that is really broad there are so many reasons as to why we do different things every day. We are learning and it’s like a never ending experience, that sounded pretty lame (giggles) but it is hard to generalize. So like when you talk about a child you want to look at that in the past tense. So you don’t make what they did timeless, I mean what if he was angry that day or he was shy and then you say he is a demon child, you can't assume, you can't over generalize.

Maggy, in her response, explained that she was making sense of cultural practices and learning styles as dynamic entities. To this, Cain added that cultural mediation helped people make sense of the world. As he talked through his understanding that learning is always happening, his comment was accented by the afterthought, “that sounded pretty lame.” Through this comment, he stated his own reaction to his realization that learning is always happening, as if it were the first time he heard himself say out loud that learning is always happening. This comment demonstrated his emerging understanding of learning. Like Jennifer above, Cain’s sense-making process was supported through trying to help his peers work through their own conflicting understandings. This point underscores the importance of the collective sense-making process, where learning is an “unknown form of transformation” (Y. Engeström, personal communication, September 23, 2013). I want to qualify this notion of unknown transformation by emphasizing that although some shifts in undergraduate understandings are expected, as an instructional team we could not predict which conversations were going to lead to aha moments, like the one Cain experienced in this interaction. This illustrates the importance of allowing a space for ambiguity as students develop, and experiment with, ideas over time. In addition, such space needs to be
replete with tools that allow students to, as stated by Jennifer, re-mediate undergraduate students’ understandings. I have depicted this collective learning process and Cain’s moment of clarity in Figure 7 at the end of the section with a dotted line that emerged out of trying to help Bailey with her inner contradictions.

![Figure 7](image.png)

**Figure 7.** Representation of mediational tools introduced to facilitate refraction with a focus on Week 7.

I want to return for a moment to Bailey’s common sense understanding of culture and the understanding that culture is not static that emerged for Bailey through this conversation. Below, is an excerpt from Bailey’s self-reflection. In this space, she reflected on the inner contradictions that she worked through about the conflation of race and culture as well as the structure of the class over the course of the semester.

This class also made me realize the number of preconceived notions I had about culture, learning, and development. Before taking this class, I always associated culture with race, and I had a boxed view of what learning looked like and how it was assessed. At first, the class curriculum frustrated me because there were so many theories I had wanted to have at my fingertips right away, and I always seemed to learn about a theory through class reading just after I had needed to know the definition most. However, upon reflection at the time and now, there really is no other way to structure the class, nor can the students learn all of the necessary theories without time constrain. Further, most theories build on others, and distinct knowledge of one is necessary to understand the next [emphasis added]. (Bailey, Self-Reflection)
Bailey discussed the shift she was making in separating out race and culture as two separate
concepts. She also expressed frustration over the process of being introduced to a family of
theories that complemented one another. Her desire was to have the theories “at my finger tips
right away.” I argue that her desire for the immediacy of answers, similar to having the right
answer, was a source of frustration for Bailey and other students. This was a frustration she was
able to name at the end of the class. As described by Bailey, she learned that the
interconnectedness of the ideas and theories necessitate that the theories build on other theories.
Thus, learning had to be organized over the course of the semester to allow for the
developmental process of learning.

The abstractness of the concepts created another source of frustration, as expressed by
Troy in his self-reflection. In particular, the concept of mediation was hard to understand. As he
explained:

At the beginning of the semester I had a very hard time understanding the concepts that
we learned in class. Throughout the semester, examples at site and our class discussions
helped me continue to broaden my understanding of each concept and clarify any
misunderstanding that I had. One of the first concepts that we learned was mediation. To be honest, I hated this concept for the longest time. For me, mediation was too
general and occurred way too often to be a concept that I wanted to apply or write
about. I felt that anything a teacher or undergraduate did at site was technically
mediation. As time went on, I realized that mediation is actually one of the
fundamentals of learning. Anytime that we do anything at site that can potentially affect
the learning of the students, mediation is occurring. As we went further into mediation,
exploring concepts like mediational tools and re-mediation, I started to use these concepts
to try and intentionally mediate learning every chance I had at El Pueblo [emphasis
added]. (Seth, Self-Reflection)

Seth moved from being frustrated by the notion that mediation is always occurring to
understanding it was a fundamental source of learning, and even further, mediation became a
tool to be used in the classroom. Seth did not come to this realization right away, mediation was
introduced in Week 4 and re-mediation was not introduced until Week 8. There was a period of
at least 4 weeks between these two concepts. And while I cannot bracket the time period of
tension, I do want to highlight this time frame to demonstrate his learning as a developmental
process that required a time of ambiguity of emerging ideas.

In conjunction with the mirror, the understanding that learning is also a rupture of old
notions, including deeply held assumptions about common sense and a conceptualization of
learning as a developmental process, a Change Laboratory, must allow for spaces to work
through the inner contradictions. As described in the previous chapter, a common sense
understanding of learning and teaching was that the teacher had the right answer and the student
was responsible for receiving that answer, which perpetuates an adult-led power dynamic. By
allowing inner contradictions to arise and creating a space to work through them, I argue allows
for a deeper understanding of concepts. This space requires the development of a tolerance for
ambiguity to stay and work through these inner contradictions, thus allowing for the unknown
form of transformation or the zone of proximal development (Vygotsky, 1978). The difference
between scaffolding and the zone of proximal development is that although both provide support,
scaffolding has a predetermined endpoint, which can inherently lead to more “right or wrong”
ways of viewing, where ZPD necessitates having an undetermined and expanding endpoint (Cole
& Griffin, 1983). To engage in a collective ZPD, a tolerance for ambiguity must be developed
along with a space that is saturated with mediational tools to work through and struggle with the
inner contradiction—which in this learning environment the inner contradiction was one way to
work through recognizing strongly held common sense beliefs about learning, culture, and
teaching.
Pedagogical Imagination

Throughout the course, as described in the previous two sections of a Change Laboratory, the instructional team worked to introduce a “mirror” through tools, prompts, and intentional design to support student reflection. The process of mirroring was intended to aid in the identification and rupturing of common sense notions. However, identification and rupture must be complemented simultaneously with opportunities to develop a new pedagogical imagination (Gutiérrez, 2008). The pedagogical imagination is incited through the creation of spaces that allow for an alternative to the previously held common sense notions about teaching and learning and their relation to culture. Through making the tensions visible between common sense notions and alternative understandings of teaching, learning, and culture, El Pueblo Mágico offered an alternative space, a playground for emergent ideas, where students were allowed to try new language, practices, and work through their understandings. Through this ability to experiment with their emergent understandings, theory, and practice, students started to reimagine change as an everyday possibility and envision a new role for themselves as future teachers.

To illustrate what I mean by pedagogical imagination, I provide representative examples from the class discussion that took place during Week 10. During this week, students had read an article on social design experiments (Gutiérrez & Vossoughi, 2010), which discussed the designed program, Las Redes after which El Pueblo Mágico was modeled. The class formed into small groups to discuss the article. When the class came back together for a large group discussion, the following conversation ensued. I have broken the conversation into smaller excerpts to allow the analysis to unfold:

Eli (UG): The conflict between like the interactions and settings and how El Pueblo is constructed to enforce these theories. And it helps us understand them and how it will be different in our classroom or even a school setting where these are not necessarily the values that are made available. I don’t know, and like not necessarily
that it is not possible, but how valuable this time is and like really making the most of this as a learning experience and also like also like you were saying . . . it is really important to like see these theories in action in El Pueblo, because now we can make the connection to this class in two when we are teaching, or no.

Alexa (IT): What do you all think about this conflict between thinking about these theories in a space that is deliberately organized and informed by these theoretical principles and the conflict, tension, contradictions, between that and the way that traditional classrooms are organized?

Eli (UG): And like the way that even if you organize your classroom in these ways you are still operating in a school that are not like founded in these principles.

Alexa (IT): What do you think about that? (Classroom Discussion, Week 10)

Eli’s discussion highlights three concepts. First, through the reading and analysis of the article with her peers, she started to see the way that the environment was being organized for her learning. This metacognition can be powerful in that she is beginning to make connections between the ways the instructional team organized the classroom learning environment and the practices in the classroom. She realized that she was experiencing an example of what the instructional team had been saying was possible to do in schools. Further, she was making the connection between the theories with which we were engaging and their future application “in 2 or 3 years when [the students] are teaching.” Second, I want to draw attention to the use of her language, “even if you organize your classroom in these ways.” Eli exemplified a shift that occurred over the course of the semester in which students were making sense of teaching as organizing their classrooms. This shift points to the agency of the undergraduates to intentionally develop spaces for students as well as challenge old common sense notions of the division of labor as unidirectional as explained in the previous chapter. Third, Eli brought attention to her concern of the potential disconnect between the theories of learning being engaged in class and the larger school values. This concern became more evident through the exchange with Alexa.
In response to Eli’s observation and Alexa’s prompt to the class in regards to what they thought about Eli’s comment, the following conversation ensued:

Cain (UG): There is still room to apply these theories, even if it the smaller sense, it is not like your school has to be founded on these principles or I don’t know. You can make these things as cultural as El Pueblo. I mean these things happen naturally all the time, like learning from each other or teachers re-mediating things so teachers can understand. I mean it will be more difficult but that is the part that . . . the difference between like, um thinking about these theories and sliding them into whatever situation you have as a teacher. Even if it is in these small moments. (Classroom Discussion, Week 10)

Also, Cain made sense of the aforementioned contradiction—between utilizing sociocultural theories of learning and the potential incongruence to the larger school philosophies—through his expressed understanding that these theories can be applied “even if it is in a smaller sense.” In this way, he recognized that opportunities to re-mediate were part of everyday practices. Through this analysis, I was reminded by Cain that imagination to create large-scale change actually starts with our everyday actions, and “sliding [the theories] into whatever situation you have as a teacher, even if it is in these small moments.” Understanding that opportunities to change occur in everyday activities and interactions may alleviate a sense of being overwhelmed with changing a large (school) structure.

Recall that the pedagogical imagination is co-occurring with the process of mirroring, as well as the rupture of older understandings being fostered in the Change Laboratory. This alternative space then is designed to incite the pedagogical imagination by seeing change in everyday practices. Cain made sense of the way that even in constrained environments there are ways to alter and re-mediate the everyday practices of the classroom. Erin responded to Cain with the following comments:

Erin (UG): We talked about El Pueblo and what we learned and how to apply the theory and practice in an experiment can change the other learning situations in a broader context. I mean, looking at it as a social design experiment and like reading the article
and having it be this organized structure way to learn that can change other structures too.

Melina (IT): So when you go to other environments. (Classroom Discussion, Week 10) In the same way that Cain saw change possible in the classroom, Erin also recognized change on a slightly larger scale, in which thinking about a social design experiment might be able to also change structures beyond a classroom or “in a broader context.” Erin’s observation was complementary to Cain’s understanding of change through everyday actions. However, she highlighted that there was a way to develop a social design experiment that could go beyond the walls of the classroom.

In response, Alexa returned the discussion to the class and conversation continued as follows:

Alexa (IT): I am curious what other people think. I mean that is so important. This is a teacher education course—and although not everyone is becoming a teacher—but now that we have figured out how to use CEs to learn more about theory and think about learning. What does that really mean when we are going into these other contexts where our role is to be a teacher in this larger organization, in this big social structure? How does this all fit together? How is it useful? Is it frustrating?

Albert (UG): It is, I am volunteering at [a local] middle school and it’s really just the way it is set up. I notice when the class is student or teacher centered, or where the student is struggling . . . and where things can be re-mediated. But that is not really an option because I don't have the power to restructure the assignment or . . . the school curriculum and what they are supposed to learn. So like I am recognizing the theory but really getting able to use them is hard. (Classroom Discussion, Week 10)

As a volunteer, Albert felt he did not have the power to restructure or re-mediate activities in the classroom. However, he was able to identify the larger class structure, the movement between student-centered to teacher-centered. Further, he noticed and reflected on the ways to change the environment or re-mediate the environment when he noted a student struggling. He saw the potential of changing this environment and what he could do if he were the teacher.
Alexa continued this conversation and followed up with an example of her own teacher education training. She recalled an experience from her teacher training course, which too was very theoretical and explained how this frustrated many of her peers who instead, “wanted a bag of tricks” or methods but not the theory. She continued by paraphrasing the way her professor explained her rationale for exposing students to theory; she insisted that they needed to know the theory, *the why*, behind the tools they were using. This same view was very much a part of the undergraduate course. Alexa then concluded her response with the following:

So I think that having this toolkit of theory and this more robust understanding of learning *better prepares you for longer engagement that operates in the interest of students and student learning*. This way you are not just this solider that does the methods that we learned. . . . And then I went into being a teacher, and there were things that I wanted to change. And there were *some things that I had to sneak in* and do covertly, and other things that I would go do and pitch to my principal and *say this is why I want to do this thing, and you do this negotiation all the time and if you can say it is about learning you have a better time to get away with it*. . . . (Classroom Discussion, Week 10)

Here, Alexa made explicit two forms of navigating the tensions, described earlier by Erin, about how to exist in a space that is engaged with tight structure that does not allow for views of learning as a sociocultural process. Alexa then discussed the way she “had to sneak” in some of the theory into her classrooms, an idea similar to Cain’s understanding of “sliding” in theory. She also described the way that she was able to negotiate the introduction of new practices and ideas with her principal because she was able to articulate the *why* of her proposal that is going to benefit the “student and the student’s learning.” Both of these examples offer a way to engage everyday practices in new ways, thus inciting the pedagogical imagination.

Recall in the example above, Alexa asked the students:

Now that we have figured out how to use CEs to learn more about theory and think about learning: What does that really mean when we are going into these other contexts where our role is to be a teacher in this larger organization, in this big social structure? How does this all fit together? How is it useful? Is it frustrating? (Classroom Discussion, Week 10)
I highlight this exchange because Alexa made explicit the way the CE was a tool that functioned as a mirror, as a way to think about her own learning. The mirror created potential space for tensions both in examining common sense and in understanding and anticipating potential tensions in future classrooms. By creating a space where students were allowed to discuss their ideas, students were able to re-envision what school might be like by understanding alternatives to traditional ways of teaching.

Developing a pedagogical imagination or a new sensibility about themselves as teachers in new spaces with their emergent toolkit helped them think about themselves as students, teachers, and the tools that were being engaged. Consequently, the view of the student as being the source of the problem also shifted, and the attention started to move to the creation of a learning environment. This is a key move in the ability to challenge deficit thinking, as the student is not perceived as solely being responsible for learning. If the classroom can be understood as a co-constructed learning environment, then the student is not as likely to be blamed for not learning. This challenge to deficit thinking is exemplified in Albert’s comment, “where the student is struggling” he is conceptualizing and thinking about “where things can be re-mediated.”

**Layers of Learning**

A key and perhaps unique attribute of the social design experiment is that all participants, experts, and novices engage in learning and research “side by side” (Erickson 2006; Gutiérrez & Vossoughi, 2010). It was this side-by-side learning that, I argue, contributed to all participants assuming roles as learners, what I term, layered learning. As discussed in the methods chapter, my interest in understanding more deeply the design of the layers of learning first emerged during the Fall 2010 Semester, when I was a first time TA for the course. As discussed by
Gutiérrez and Vossoughi (2010) below, the layers of learning created a vulnerability that
provided insight into the experiences of the undergraduates as well as our own growth. They
write:

As educational researchers and teacher educators, participating in the practices we
study—stepping into the messiness, pressures, and joy of pedagogical work—opens our
interpretive sensibilities to the tremendous effort and struggle this work involves. Erickson suggested that by sharing in the action and cognition of practitioners, that is, “studying side by side,” we might develop more honest accounts of cultural
production and reproduction that move beyond portraits of social life as either weightless or over determined (Erickson, 2006, p. 255) [emphasis added]. (Gutiérrez & Vossoughi, 2010 p. 101)

My engagement in the larger project for over 3 years prior to my data collection allowed me to
step into the messiness and helped me realize that my learning as an instructional team member
was not an isolated or irrelevant event. As I describe below, Melina, an original member of the
El Pueblo research and site team and first-time instructor of the undergraduate class, also
experienced a learning trajectory similar to mine. Further, I realized that a foundational aspect of
learning as an instructional team member was grounded in the fact that all participants
(elementary students, undergraduate students, graduate students, staff, and faculty) were
positioned primarily as learners in the social design experiment. To demonstrate the instructional
team learning, I provide an example of Melina’s learning process and struggle with inner
contradictions. Second, I highlight key examples of our apprenticeship into the social practices
of the instructional team to demonstrate the way our learning included an apprenticeship into
practices.

**Instructional Team Learning**

In the following section, I discuss the ways the instructional team meetings were a space
in which to engage the instructional team in learning and reflection. The data example begins
with a conversation with Melina, who at the end of class on Wednesday of Week 3 mentioned to
me that she could feel the level of confusion that had emerged in the class. By Week 3, the students had been introduced to the concepts of a community of learners and the zone of proximal development and started to work on the video analysis project—which was a tool to have them apply the theories they were learning to actual classroom interactions and the classroom’s social organization of learning. As students were working through the concepts and trying to apply the theory to the video analysis and social organization of learning protocol (Gutierrez, Berlin, Crosland & Razfar, 1999) there was a sense of confusion, a collective inner contradiction that arose. I documented this sense of confusion as students worked to apply theory to actual examples in an analytical memo.

This inner contradiction during class was marked by shifts in students’ questions from more abstract to asking more direct, yes and no questions. This indicated students’ desire to get an answer. This inner contradiction was also acknowledged by Melina, who verbalized and acknowledged the inner contradictions she felt the students were experiencing. Toward the end of class she said to me, “I can feel their confusion in my bones.” This sense of confusion was further documented by the instructional team’s conversation, which is illustrated below.

Our regularly scheduled instructional team meetings were held on Wednesdays, the same day as class. This allowed for the conversation about Melina’s sense of the students’ confusion to take place immediately after class. As we settled into our meeting, I mentioned to Melina that I thought that buying into the philosophy of learning as a developmental process was really difficult because it takes a lot of reflection and working through some intense emotions. In response to my comment Melina said:

Melina: I feel the students’ confusion in my bones. It is so hard to say we have all of these tools in place. And I know that [learning is a developmental process] theoretically, but it is in the moment that it is so hard . . . I wasn’t expecting the feeling of it.
Liz: [Described how I too had a similar process of reflection and tension when I first taught the course.]

Melina: It is just my damn emotions. If I could just turn them off . . . it is so interesting . . . and even though theoretically, I have developmental trajectory in mind, it is still hard to in the moment to not want to somehow sum it up perfectly and explain it, as if it was possible. (Instructional Team Meeting, Week 3)

This segment of a longer conversation about how hard it was to really try to embody or align theory and actions in a congruent manner in class, provided a unique insight into Melina’s own learning trajectory. In this excerpt, she verbalized her reflection and her ideas as she worked through her inner contradictions. Melina cognitively understood that the larger environment was organized intentionally, as she described, “We have all of these tools in place.” She understood that we were putting these tools in place for the undergraduates to develop a deeper understanding of the concepts over the semester and theoretically that learning was a developmental process. However, she, like all of us, also engaged with dominant ideologies every day, including common sense notions about teaching and learning, and by extension, the pressure to as an instructor “want to somehow sum it up perfectly” for the students.

Melina eloquently provided a glimpse into the way both the undergraduate and graduate student spaces were part of the designed Change Laboratory. Melina’s reflection and identification of her inner contradictions about understanding learning as a developmental process and wanting to sum it up perfectly created a tension for her to work through. Melina (and I as demonstrated through the pilot) struggled to develop a “teacher tolerance for ambiguity.” As she described, it was her attention to noncognitive cues, her body awareness—emotions she wished she could turn off—that spawned this internal examination and awareness.

The instructional team setting served as a place for her to talk through her development in the same way the class and CEs did for the undergraduates. I return to Melina’s reflection:
It is just my damn emotions, if I could just turn them off . . . it is so interesting . . . and even though theoretically, I have developmental trajectory in mind, it is still hard in the moment to not want to some how sum it up perfectly and explain it, as if it was possible. (Instructional Team Meeting, Week 3)

This particular quote communicates three processes that were occurring. First, Melina acknowledged inner contradictions through her body awareness, the work of enacting the theoretical concept in practice. Second, she underscored that she cognitively understood the concept of a developmental trajectory. Last, she discussed her defaulting to the common sense notion of wanting to sum up the answer perfectly, while simultaneously recognizing that she knew that deep learning took time and that it might not be possible to sum it up in that moment. From this statement it is evident that Melina, in a similar learning process to the undergraduate students, was working through the application of her cognitive understanding of the theory and the enactment of it in class. Thus, *El Pueblo Mágico* was organized in a way that fostered layers of learning.

In addition to providing an opportunity to reflect on her inner contradictions, Melina’s participation in the course led to a shift in her actions that was documented in Week 8. Although the class was always co-planned and co-led, Alexa, as the most experienced instructor, assumed the lead, especially for the first half of the semester. During Week 8, Alexa had to miss class and Melina took on a larger role in the class discussion. The topic for that week was re-mediation.

The students were in small groups and Melina brought the groups back together as a whole class.

Melina (UG): (Brings the groups together.) I heard some really interesting conversations. What are some of the new understandings or questions that came up?

Jennifer (UG): At first we didn't really realize the difference between mediation and re-mediation, and we were confused. But we figured out that . . . we re-mediate using tools. So . . . re-mediation is something we use every time we figure out something new and a better way to improve it . . .

Cain (UG): That is what we took away with the CEs.
Bonnie (UG): Just that every time we have to think about the theories we are using and writing them down, we are thinking about how we are using them and how we can use them next time and we can alter how are I guess, working on them and how we can better implement the theory, so writing them every week changes how we act the following week.

Melina (IT): And too about the assignments and how many ways we get to use the concepts and attach them to what you are seeing at site? And how that, in a sense, is a re-mediation of the assignments. Other things that came up in the groups? [There was a couple second pause. Melina looks down.] Albert (UG): We also talked about the theory and the research as well, and how we can go after class and engaging with it at site. Like the CE and like, and if you can tell me to look at things and then it can be helpful to understand better.

In this exchange, Jennifer made sense of re-mediation using tools in a different way to help improve the learning environment. This definition is a simple and succinct breakdown of the topic at hand—re-mediation. Bonnie further stated that she noticed that the CEs were used not only to make sense of the theory and practice but to also influence undergraduate actions at the practicum site the following week. Thus, the CEs aided in helping the undergraduates become more intentional during their time at the site. In this way, we further see the ideas flowing from the classroom to the after-school site. Melina responded to this comment by adding that this space to write out theory existed in many tools, not just in the CEs. Then she prompted the students to provide other examples. There was a moment of silence across the room. Melina looked down. This action by Melina was a small sign that she wanted the students to talk through their thoughts and ideas. This pause and glance down was an intentional move to help students talk with one another.

The pedagogical move of “wait time” is a well-known technique and is not in any way unique to this classroom. However, I want to highlight this pause in conjunction with the tension Melina expressed at the beginning of the semester about giving students the answer, as opposed
to allowing them time to work through their own articulation of their response. The expectation of having students make sense of ideas in class had been a practice of the classroom from the beginning. As Alexa told the class when there was little response to her questions during the second week of class: “You are going to talk a lot, I am going to talk a little.” This space and shift from lecture to include increased student dialogue demonstrated the way the instructional team solicited the undergraduates to work through their understandings. This allowed for the language and representation of ideas to also be re-mediated.

When I first started to content log my data, I remembered vividly the conversation about Melina’s tension between allowing the space for students to play with ideas and work through tensions and giving students an answer to alleviate their frustration because it mirrored my experience so closely. However, this pause that occurred and Melina’s looking down caught my attention and helped me understand some of the ways that Melina was working through not summing up the answer perfectly for the students. With this example in mind, I approached Melina after the conclusion of the semester and asked if she believed this tension she experienced early in the semester influenced her actions in class. She confirmed that her experience during the third week of class made her approach the class in a “more conscious” way, where she tried to allow more space to have the students talk through some of the ideas (personal communication, January, 2014). In other words, her reflection and space to work through her inner contradiction influenced her actions in the classroom. She too was working toward praxis.

In Figure 8 I have added an additional layer to represent instructional team learning. The yellow prism is present to represent the space for instructional team meetings. The dotted line starts with twisting in Week 3 of the undergraduate class, as this is where Melina first started to get her sense of feeling students’ confusion. This dotted line, the tension, traveled into Week 3 of
the instructional team planning session and traveled to Week 8 in the undergraduate classroom as an intentional shift in Melina’s actions. This line continues into the third layer of learning, the practicum site. The connection is that in the class the discussion was organized around the CEs and the experiences of the undergraduate students at the site.

Figure 8. A representation of the layers of learning.

The positioning of all participants as learners is a unique aspect of the social design environment in which learning involves the co-construction of knowledge. In this way, the instructional team developed a self-consciousness about our own practices, as well as the understanding of the intentional design of the El Pueblo Mágico learning environment. Through reflection within the instructional team and larger research team, El Pueblo Mágico was a dynamic model, in which reflection led to ongoing change through the identification of what might work better the following semester. We learned, adapted, and redesigned tools and tried new approaches to solving programmatic tensions or new insights gained through reflection. Thus, the instructional
team was apprenticed into thinking about the underlying theories of learning at work, the design of *El Pueblo Mágico*, and how theories were enacted in the course and at the practicum site.

**Apprenticeship**

The processes of our apprenticeship were foundational to the practices we engaged in as an instructional team. In the following section, I return to the conversation in the previous section about the confusion Melina “felt in her bones” to provide an example of the apprenticeship process we engaged. As Melina, Alexa, Paul, the undergraduate TA, and I continued the conversation about the tension Melina identified, we further discussed how hard it was to truly commit to learning as a developmental process and that often the students could be more focused on grades. Paul mentioned how different this class was from high school and then added, “even many college classes,” in that it is a demanding class. He stated that traditionally most students he observed did not want to do an assignment if it did not contribute to their grade. He continued, “I do it because it is important and I am interested in the idea.” Alexa responded that to support students in this learning environment it required us, as an instructional team, to be supportive and to “provide feedback at each turn . . . it is intense on both ends.” We likened this constant feedback and relearning to our own processes in graduate school, like completion of the prospectus and dissertation.

This process of debriefing and talking about how we were experiencing the project was a common experience for us. It did, however, often take place in a more informal manner, before or after the “official meeting” in which we discussed the response to reading questions, the agenda, or readings. As the discussion continued about the tensions between learning, grading, and feedback, I suggested that since mediation was the topic that was going to be discussed the following week, maybe the developmental process would be something that we could talk about
in class. We had already talked about the philosophy of learning and grading in class; however, we could mention the developmental process of learning through class discussions and student questions. To my suggestion Alexa responded:

I guess do we really need to be that heavy handed? This is something I learned from Kris, she does not front load the connections. She just knows that if you put those tools out there, by the end of the time these ideas come together . . . they have to trust us and we have to trust them. That is one of the most profound things that I have learned from her. She is not worried that she doesn't want misconceptions, but if the depth of understanding is not there in January she isn't worried. (Instructional Team Meeting, Week 3)

There are two things that are happening in this statement. First, Alexa reminded me, and pushed me to think about what we needed to bring into class, through her comment about “do we really need to be that heavy handed.” As I wrote up this section, it would have been cleaner to take that first sentence out and make a more direct analysis on the second point about being apprenticed; however, I learned an immense amount about the nuance of theory and the application of it to class through these seemingly small interactions between the other instructors. Learning to not be heavy handed or to have a “light pedagogical touch” (Espinoza,) is something with which I struggled and continue to struggle with. Alexa’s point was a source of learning for both Melina and me. Second, Alexa made explicit that through having been a TA for the past 5 semesters, she had learned pedagogical patience. She had built a higher tolerance for ambiguity because she learned through her experiences in class that at the end of the semester connections for the students happened each semester.

To fully understand the apprenticeship of this instructional team, I return to the early development of El Pueblo Mágico. Melina, Alexa, and I, along with two other graduate students, were all brought onto the team during its initial stages of being designed for this university setting. Our goal was to learn about other practicum sites and the tools they used. We then modified the tools to fit our specific needs at El Pueblo Mágico, including a new focus on
activities that privileged students as designers and STEM related activities. Similarly, the undergraduate class was co-created by adopting the syllabus and design of the UCLA course, Education 194, Culture, Learning, and Human Development, as well as designing the new class as a team comprised of graduate students, Professor Gutiérrez, and a seasoned graduate student from UCLA who had taught the course for the UCLA/Las Redes site. With this introduction to El Pueblo Mágico, graduate students were apprenticed into the practices of this new social design experiment primarily as learners.

The excerpt below is from the instructional team meeting during Week 4, in which we explicitly recognized this apprenticeship process. The conversation came up as we discussed the design of El Pueblo Mágico and how El Pueblo Mágico could be replicated. This series of exchanges exemplified our own recognition of our apprenticeship model that we engaged in as learners of El Pueblo Mágico.

Melina: We had a year when we sat with Kris once a week and we developed this from the ground up. How do you start to recreate that in a new way?

Alexa: Our planning meetings the first semester were 3 hours of us learning from Kris, totally invaluable, so how do you replicate that?

Liz: How do you make it intentional now? It was when we were learning about it.

(Instructional Team Meeting, Week 5)

In this conversation, Melina referenced the investment we each felt in making sure we continued to work and be engaged in a way that was congruent with the design of El Pueblo Mágico. Alexa mentioned the time that was spent planning for the first course that she, another graduate student, and I were TA’s for Professor Gutiérrez. Each week, we met in Professor Gutiérrez’s office and discussed the main points of the article for the upcoming week. Often this included the history of some of the articles and authors, as well as related ideas. From the discussions, we then drafted the responses to the reading questions, at the time called guiding questions, and set the agenda
for the next meeting. During this time, we started the practice of writing out all of the upcoming “to do” tasks on Google Docs, as well as our goals, the agenda of the class, and how much time we wanted to allocate to each of the topics. Of course, the times allocated for class never quite worked out as we wanted them to, but I mention this to highlight the way the class activities were strongly grounded in the discussions about the readings. The discussion of the readings and then development of the class activities around the readings was a practice that we kept throughout the Spring 2012, which was the first time that graduate students taught the class without a lead faculty member. I discuss this practice around the response to reading in more detail later in this chapter.

I return to the last part of the conversation that took place during Week 4 about our own apprenticeship process. I asked, “How do you make it intentional now? It was when we were learning about it.” Only now, as I write my dissertation, am I becoming more aware that our “learning about it” played a large role in the intentionality of the design that was needed to replicate and continue to grow this social design experiment. As learners ourselves, all ideas and actions were open to discussion, to be challenged and expanded.

Also, notice in this exchange that all three of us, Alexa, Melina, and I, each ended our comment with a question. We did not have an expectation that our question would be answered, but instead one question led to another comment and question. This practice of asking questions was one that I had not noticed before and became aware of through content logging the research team meetings and instructional team meetings. Below, is an observer comment found in one of my first journal notes after content logging a research team meeting. I wrote:

[Observer Comment]: I am not sure if it is because of the research lens that we bring with us, but we have a lot of questions that we use in the discussions, just something to point out. I wonder: what are the uses of the questions[?] How are we using the question[?] (umm like I am now:)). Or is it a direct link to the way that we are thinking
through the tensions[?] Is it part of the model[?] The more questions I ask in this little section to figure out why we are asking questions, I realize that I am using it as a reflection but also an uncertainty, but a question that I also want to figure out [emphasis added]. (Research Team Meeting, Week 2)

The questions, as I have come to understand, fostered a space of reflection, an entry point into deepening our own learning. Of import, it was not only a place of reflection, but the reflection then turned into action. The reflective space led to suggestions about what could be done differently the following week or semester. Further, I noticed that questions had a strong presence in the undergraduate classroom and that the instructional team would often use both summary and questions as a way to engage the whole group in dialogue.

**Boundary Artifacts**

A central aspect of a learning ecology is the notion of “learning as movement” (Gutiérrez, 2008, p. 43). This concept became clearer through the process of writing this dissertation. More specifically, this notion became more lucid as I worked to understand how to foster and design for a cohesive learning ecology. Guided by the following excerpt, I tried to conceptualize the role of artifacts that mediated the process of reflection and action:

Simply moving between shop floor and an empty laboratory space or university classroom and school site may not facilitate the kind of deep reflection necessary for creating equity-oriented and meaningful change in work and educational environments. Rather, it is the artifact-rich environment — the material, conceptual, and human tools made available for and constructed within the laboratory—that mediates the process of reflection and action [emphasis added]. (Gutiérrez & Vossoughi, 2010, p. 61)

The unification of the learning ecology did not occur simply because movement was happening across the environments. Instead, artifacts helped create a bridge between the individual learning environments—practicum site, undergraduate class, and instructional team meetings. A boundary artifact is an artifact that moves across at least two learning environments and works to foster
learning and the unification of theory and practice. In the following section, I describe how the response to readings and the cognitive ethnographies acted as boundary artifacts.

**Response to Reading**

The response to the reading assignments was designed to mediate students’ understanding of concepts, text, and theory. The guiding question, which served as a prompt for the responses, was designed to help students enter the complicated text and was designed in joint activity by the instructional team. The response to reading assignments have a long history at UCLA’s *Las Redes* and questions from the undergraduate 194 course were iterated and expanded upon in the *El Pueblo Mágico* course. The development of the guiding question that subsequently students wrote about in their assignment acted as a mediating artifact that created cohesion between the undergraduate classroom and the instructional team meetings. In the undergraduate classroom, the response to readings facilitated undergraduate understanding of the texts and was simultaneously used as prompts for small group discussions. In the instructional team meetings it deepened the instructional team learning and created a space in which to think about connections between readings over the course of the semester.

The response to readings consisted of a total of 12 sets of writings students completed prior to class. Students were instructed to “draw thoughtfully” on the text and write a “clear, well-written, one page (double-spaced) response to the prompt of the question” (*El Pueblo Mágico* Spring 2012 website archives). Each prompt was developed by the instructional team collectively and was intended to provide a space for individual sense-making (Instructional Team Meeting, Week 0). Students were required to bring these responses to class as they were also utilized as a foundation for small group discussions (e.g., class discussion Week 2 and Week 3).
In Appendix G is a complete list of all of the required text and associated response to reading questions.

Through the response to reading prompts, the instructional team provided advanced organizers for understanding the readings, as well as questions to further consider about key ideas in the articles. Writing a memo about mediational tools present in the undergraduate course unveiled a realization for me: the development of the guiding question not only aided as a point of entry into the text for the undergraduates, but the development of the question also played a larger role than I expected as an opportunity for learning for the instructional team members and intentionally organizing the class. I later learned that the response to readings always had this dual purpose in the early iterations of the *Las Redes* social design experiment. Through this dissertation, I was able to empirically document this same experience at *El Pueblo Mágico*. This historical understanding of the artifacts and their roles, in combination with the empirical evidence, contributed to my desire to understand how to develop and implement social design experiments.

In the following section, I detail the role of the response to reading as an artifact that crossed boundaries to create cohesion across seemingly bounded environments, the instructional team meeting and the undergraduate course. I have selected to examine the development of the first response to reading prompt, which was the Rogoff (2003) community of learners article. Through this discussion our communication about the philosophy of the guided question tool was made most explicit in the instructional team planning discourse. Below, is the final version of the reading question that was assigned to the students:

Rogoff’s Community of Learners model asserts that learning is a process of transforming participation over time where adults make a “self-conscious effort” to produce and manage learning (p. 213). Based on these assertions, can you describe a time when you participated in a Community of Learners? Explain why you think your experience
represents Rogoff’s model. **note we know this is your first [Guiding Question], so it is not as important to have the right answer, but to play with the ideas and theories in order to make sense of it. (El Pueblo Mágico website, Week 2 response to reading prompt)

We used this question to encourage students to think about how (a) learning is a process of transformation over time, (b) engaging in self-conscious practices is necessary, (c) creating connections between course content and personal experiences is needed, (d) representing a community of learners can be accomplished from students’ experiences, and (e) responding to reading created a space in which to play with ideas. The instructional team deliberated, discussed, and negotiated about each of these points over a 40-minute conversation. During this time, the instructional team worked collaboratively to determine the most important points for the undergraduates to learn. I articulate this exchange for a couple of reasons. First, through our deliberations about which points to highlight, we deepened our learning by negotiating these points and returning to the text to clarify questions that arose. Second, through the development of the guiding question, we also decided which concepts to foreground and used intentional language to help plant seeds for concepts that facilitated sense-making of concepts to be introduced in upcoming weeks.

In the following vignette, I highlight some of the exchanges and interactions during this time. However, before I proceed, I want to articulate the difficulty I experienced in writing this section due to the overlap and exchange of ideas over the course of the discussion. I often found that as I was trying to select an excerpt or describe the origin of an idea, the ideas were co-constructed by the team members and selecting a single quote or excerpt would not show the collaborative work being done. This level of interaction to develop the response to reading demonstrated our collaboration toward a common goal, the joint activity that shaped the development of the response to reading, and the promotion of instructional team learning.
Our first meeting took place a week prior to the start of classes. We met at Panera Bread, a central location between where we all lived. Armed with our snacks and coffee, we prepared for the class. After finalizing the website and syllabus, we focused on preparing for the first response to reading, which the students would complete. The response to reading started as both Alexa and I looked up the questions used previously by the course associated with UCLA’s *Las Redes* and questions the 4411 instructional teams had used the previous semester.

The Spring 2012 Semester was the first time the class began with a reading about community of learners. The readings included the Rogoff (2003) article and other authors who we planned to introduce later in the semester. As a result, the questions were combined with other articles and emphasized the asymmetries of power in the community of learners, which were more relevant at the time they were introduced in the sequence of those particular classes. Alexa read one question and I read the other question and stated:

Liz: I wonder if asymmetries is not the best thing to start off with the first week. [We giggled and there was a pause. OC: I was not sure if the giggles were in agreement or for another reason.]

Alexa: Go ahead.

Liz: It is not as central to the article. . . .

Alexa: What do you think?

Liz: I think that there are other things to highlight before we talk about asymmetry of power.

Alexa: I think the shift in participation over time. As soon as you read that I was like oh yeah.

Liz: In addition to that we can also think about the three models [adult-run, child-run, and community of learners] and how community of learners is a different philosophy. It is not a combination.

Alexa: Right, that is where they get confused, and how it is a different theory of learning.

Liz: We should think about a question like how does the transformation of participation fit into this new philosophy.

Melina: Or how does the transformation of participation theory overlap and differ from your own experiences as a learner, so this brings them in, they have such little space to write.

Alexa: This is true, it is less than it used to be.
In the background, I heard clicks on the laptop keyboard mixed in with the classical music that Panera Bread played. Alexa started to document some of these ideas on a shared Google document. As she typed she said, “So we want them to get out of it that there is a theory at work, this new philosophy.” Melina and I watched on our screens as the Google doc reflected each change to the question in real time. Alexa thought out loud, “Rogoff’s community of learners model is, suggests . . .” There was a pause. She continued and let out a slight growl, “Arrrgh, these types of things take me so much time.” Another moment held in silence, then Alexa continued thinking out loud with the group, “So we want them to get out of it that there is a different philosophy not a combination, and Melina you were talking about adult roles.” Melina responded and added, “And what do I [as an undergraduate] look like in this space?” The interaction took less than a minute to unfold. A series of ideas emerged, woven in and out of our conversation, about the central aspects of a community of learners that we wanted to foreground for the undergraduates. After a few more minutes, the conversation continued and Melina added, “I love the part at the bottom of page 210 where Rogoff talked about how it is not about what the students learn but also the practices that they learn.” Alexa agreed and added that the idea of thinking about practices is important “because that is an idea we want the undergraduates to think about at site.”

Fifteen minutes into the conversation, we struggled to formulate the question. Alexa reread a section of the article and Melina posed the question that “Maybe that’s too much for this question” and suggested that we make it more simple, and bring the quote into class for further discussion. Alexa agreed. I found a quote on page 213, and read it to the group. As I read, Melina read along side on the printed copy and Alexa followed along on her screen.

Liz: “Among the most important [differences in a community of learners] must be that a community of learners in a classroom is a more self-conscious effort by adults to produce and manage learning by the children and is less focused on carrying on productive community activities than are the relations between adults and children in communities in which children’s learning proceeds as they participate in ongoing mature community activities.” This goes back to the role of adults “to manage learning.” I wonder if we can use this and then use this when we talk about mediation. I just don’t know how to write that.

Alexa: Well, it connects to the adult roles. [In a slow, drawn out voice, repeats and typed] “The role of the adult is. . .” [the tic-tac of the laptop keys].

Liz: [Repeats quote.]

Alexa: So what does she call it, “self-conscious”? [Another pause then she continued.] I like that because it’s all about being reflective. This helps [the students] think about the OCs in the cognitive ethnographies.

Liz: [I was rereading the question on the screen and missed part of her explanation, so I asked] How does it relate to the OCs?
Alexa: Well, it’s this idea about being conscious that it is a very intentional and it’s about reflecting and being conscious. [She paused and giggled.] Like the opposite of scripted curriculum.

This vignette, which included a conversation that lasted for about 40 minutes, helped me understand that this collective development of the guiding question, as empirically detailed above, fostered instructional team learning. Through having to articulate our understanding of what we thought were important parts of the text, we deepened our own understanding of the article. For example, on multiple occasions, we reread excerpts of the text for both clarification and also to rationalize the reason we believed an element of a community of learners was important. This practice of developing the response to reading was part of our apprenticeship and a process we engaged in for all of the responses to readings. Second, I want to highlight the careful and collective development of the guiding question that planted the seeds for concepts that would be introduced in the upcoming weeks. Last, and most directly, the response to reading question was brought to class and used to inform the small group and large group discussion.

In Figure 9, I have created the red prism to represent the instructional team meetings with the development of the response to reading as a mediational tool to deepen instructional team learning. I have also included red mediational lines to Weeks 2 and 5. These lines represent the purposeful selection and inclusion of words that planted seeds for ideas that would be transferred to site and class. Each “stitch” represents a response to reading question that was utilized during the week.
Figure 9. A representation of the layers of learning in the relationship between the instructional team and the undergraduate classroom.

The intentionality of linking concepts across weeks is demonstrated by crossing of the spaces that can appear to be self-contained learning environments—the instructional team meetings, the undergraduate classroom, and the practicum site. Instead of three self-sustaining sites, the boundary artifacts helped stitch together the learning environments to create an interconnected quilt of ideas and spaces. Thus, making these connections visible helps demonstrate the way boundary artifacts not only travel across space but also help create instructional cohesion over time.

Cognitive Ethnographies: Movement Between Undergraduate Classroom and Site

The cognitive ethnographies were designed as a way to help the undergraduates make sense of theory and practice. They were carriers of theory to site and practice into the classroom. The role of the undergraduate sense-making through the use of the CEs has been mentioned in earlier sections of this chapter, as they were a central focus for discussion. For example, two of
the three discussions about the recognition about labeling students were around the writing of the cognitive ethnographies. Further, recall the discussion that Jennifer, Bonnie, and Albert held during Week 8 demonstrated how they understood the CE to be a tool to remediate their own learning. The CEs, and more specifically the discussions around the CEs, facilitated the conversations about site in the classroom.

In addition to class discussion, students in their own words recognized the importance of the CE in their learning, in particular around bringing theory to site. In their self-reflections, all of the students mentioned some way in which the CE aided in their learning. Students often discussed their love-hate relationship with the CE and the way it “forced” them to think about theory at site. In the self-reflection below, Carmen explained her relationship to the CE.

Although the cognitive ethnographies was probably my least favorite part of the course, I wouldn’t advise you to remove them at all. I didn’t love going home after site and writing all about my interactions just because I never knew really what to say, but in the end, when it came time to write our final paper, I was most certainly pleased having all those documented interactions right there in front of me to refer to. The cognitive ethnographies were a great source of information when we were told to look/think back to site, because although this course was important to me, I also had four other courses to worry about so those (what I thought were insignificant at the time) interactions with the Sanchez students, would not have been as readily available in my mind without the cognitive ethnographies to reflect back on [emphasis added]. (Carmen, Self-Reflection)

I selected Carmen’s self-reflection because the CE is a task that is time intensive, and I wanted to again demonstrate the messiness of the course. At the time, she thought documenting interactions in the CEs was insignificant. However, as Carmen also pointed out, CEs facilitated the connection between theory and practice, and retrospectively, she advised that we not remove CEs from the class. These comments, I argue, provide insight into the value that Carmen eventually assigned to the CEs.
In a similar way, Jenna also pointed out the way the CEs helped her understand the assumptions she was making.

By writing cognitive ethnographies every week for six weeks it better helped my understanding of learning immensely. While it was difficult in the beginning I was slowly able to hone my ethnographic skills, I knew what to look for and look at what I should have done and what I should do at El Pueblo for next time. I would first always assume things about my children but not know why. Through the weeks I made a point to ask why they were feeling certain ways so I would know. Looking at my cognitive ethnographies, it helped me realize how I could better understand my children. It was extremely important to use my cognitive ethnographies to better understand my children by looking back at events that had happened through the weeks. It was cool to see the growth in my students and myself as a “teacher.” Cognitive ethnographies also helped me better remember the community of El Pueblo and take notes on it for the next time. While cognitive ethnographies could sometimes be a pain to write, it overall helped my learning in this class and at practicum [emphasis added].

(Jenna, Self-Reflection)

Jenna here echoed many of the sentiments expressed by Carmen but also recognized the role of the CEs in helping her think, not only retrospectively, to connect theory at site and also to help her plan for the next class. Further, Jenna mentioned that it was “cool” to see her growth as a teacher. Again, the meta-awareness of the way each site was organized around the same principles of learning allowed students to learn and experience the theories being taught in a unique way.

In addition to the movement of theory and practice between the class and the practicum site, the CEs also facilitated cohesion by providing insight about activities at site. Through constant feedback, each instructional team member was responsible for giving feedback to a group of students (six to eight students). Since the students were writing about what they were seeing at site, the instructional team had some insight into the activities at site. This is important because it further allowed us to bring experiences into the classroom for discussion and allowed us to troubleshoot and address concerns. For example, in the CE excerpts below, I highlight three examples of the ways students discussed the opening session of the first day at site, which
included an administrator overview of a term called “Sanchez PRIDE” and an overview of the *El Pueblo Mágico* constitution containing rules and norms for the site (see Table 2).

Table 2

**Representative Examples From CE 1**

<table>
<thead>
<tr>
<th>Name</th>
<th>Excerpt from cognitive ethnography 1 about rules and norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bailey, CE 1</td>
<td>I moved on to another group of kids and we listened to the vice principal go through the rules of PRIDE (Positive Attitude, Respect, Integrity, Do My Best, Empathy). Afterward, we were led into the library and sat on the carpet to go through the exact same PRIDE rules with the vice principal again. I heard several kids complain that they had been reminded of these rules at least three times in the last two days. Jackie then led us through the <em>El Pueblo Mágico</em> group rules specifically.</td>
</tr>
<tr>
<td>Erin, CE 1</td>
<td>The Vice Principal, who asked for kids to share any of the rules that were discussed, called our attention. (OC: A lot of the kids bounced excitedly, waving their hands ready to share): no jumping on the couch, no running, no tearing up the books, and no eating and drinking in the library. (OC: With this last one the little girl I had first talked to looked up at me and smiled and I whispered, “you were right!”) Then the vice principal talked about how he wanted the kids to show their “Sanchez Pride” and that the adults will be looking out for when they are showing it. Then Meg asked the kids if they knew what a constitution was, and that for <em>El Pueblo Mágico</em> there is a constitution that we are to follow, because it is something that everyone agrees on.</td>
</tr>
<tr>
<td>Alice, CE 1</td>
<td>The very first thing that happened after the children came into the library was the full group meeting. The children sat while we were all debriefed on what the game plan for the day was. Sanchez Elementary has a specific “code of conduct” that the students go by. The principal came in and went over those “guidelines” with us. He made a specific point in saying that they were not as much of a list of rules saying things that you cannot do, but instead a good way for the students to check their own behavior by. Some students had trouble paying attention and allowed each other to distract themselves from the adults speaking. For the most part the principal kept talking but when it got to a level of noise that was no longer tolerable, instead of asking all the students to quiet down he singled out a student and thanked him for remaining quiet and attentive. This worked in getting the other kids attention, and they settled down again. There were a few students who could not remain quiet and were actually asked to leave the group sitting on the carpet and to go sit separately at tables.</td>
</tr>
</tbody>
</table>

Each of these CE excerpts provides a different version of the opening activities. Through these examples, both the similarities and differences between them become apparent. The similarities
include the discussion about the principal’s remarks about the use of PRIDE as a way to help facilitate student participation at the site. Bailey provided insight into what PRIDE stood for (Positive attitude, Respect, Integrity, Do my best, Empathy) and described how the students complained about the number of times they had heard it. Erin described what “Sanchez PRIDE” might look like. Alice documented how the principal described that Sanchez PRIDE was a way to foster students to check their own behavior. The differences in these excerpts point to the way that each individual interpreted her experience and observations uniquely. However, I want to maintain focus on the way that the instructional team gained a small understanding of site activities, not in a comprehensive manner, but in a way that facilitated the discussion of site in the classroom.

In addition to gaining insight into the activities at site, the instructional team also was able to connect with students on their feelings at site, and by extension, any patterns of emotions found in the CEs. For example, a clear pattern that emerged during the first CEs was that the undergraduates were nervous about meeting the kids for the first time. More specifically, they felt nervous because they were not able to choose the students. Part of the process at site was that the kids were allowed to choose their adult amigos, or partners. Nine undergraduates mentioned to some degree feeling nervous about meeting the elementary students. Below are two examples of the language students used to describe the apprehension they experienced that first day.
Table 3

Representative Examples From CE 1 About Being Nervous

<table>
<thead>
<tr>
<th>Name</th>
<th>Excerpt from cognitive ethnography 1 about being nervous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miley, CE 1</td>
<td>I was especially nervous because the kids got to choose us, not the other way around. We joked that it was like when we were little kids in gym class getting picked for the dodge ball team.</td>
</tr>
<tr>
<td>Alice, CE 1</td>
<td>A majority of the kids gravitated to the two male undergrads and then dispersed from there. (OC: This stood out to me because I found it interesting that most of the children expressed an interest in having the male undergrads. This was also a strange moment for me since I have never had any kids actually object/reject the idea of working/playing with me. It almost hurt my feelings a bit.) My partner and I were the remaining undergrads who had no kids to be paired up with except the three boys who had been asked to leave the group earlier. This became our group.</td>
</tr>
</tbody>
</table>

I highlight these patterns, ideas, events, and emotions across the CEs as a way to demonstrate the insight that the instructional team garnered as we read and provided feedback through the CEs.

In addition to the undergraduates articulating their concerns and feelings, the instructional team also engaged in conversation with the undergraduates through feedback to create a more personal conversation outside of the formal class space. In this way, the CEs were a boundary object that traveled across the instructional team, the undergraduate students, and the *El Pueblo Mágico* practicum site.

Figure 10 demonstrates the learning ecology that includes all three learning environments—instructional team meetings, the undergraduate classroom, and the practicum site. The number of stitches represents the number of assigned CEs. The CEs helped the undergraduates think about theory at the site as they were required to describe theory through moment-to-moment interactions. It also represents the way that practice was brought into the classroom through the discussions around the boundary artifact, the CEs. The frame around the site prism represents the way the CEs provided an image of what occurred at site through
multiple accounts of activities that the instructional team read. In this way, the CEs served as a metaphorical window for the instructional team to peer into site and capture different types of activities and interactions.

Figure 10. A representation of the layers of learning for all three learning environments.

Conclusion

Understanding student shifts in thinking, as well as how these shifts occurred, creates a platform to continue to think about how to design for expansive learning. Throughout the chapter, I illustrated the interconnectedness of the El Pueblo Mágico learning ecology. I argued that to create a transformative learning ecology, at least three central tenets of social design experiments should be present. First, a Change Laboratory where students can refract, identify, and sit with inner contradictions is needed. The refraction occurring in the Change Laboratory incites the
development of a pedagogical imagination, so that in all environments alternative and productive futures are possible for participants (Gutiérrez, 2008). Second, if all participants in the learning ecology are positioned as learners in joint activity, then the environment will be ripe for deeper learning and the maintenance of a dynamic model. Third, artifacts, or mediational tools, saturate the ecology and aid in the movement of theory and practice. This movement is both between the layers of learning environments and also across time. Through empirically documenting the look and function of these tenets, I can continue to think about ways the robust design of El Pueblo Mágico can be used as a model to take to other learning ecologies, including precollege and college retention programs. To be certain, the use of the model is not intended to be a replication, but a set of practices that can be utilized and adapted to fit the context. In this way, understanding the underlying design elements of El Pueblo Mágico helps in establishing a foundation to organize for praxis, or design for mediated praxis.
CHAPTER VII

DISCUSSION

I studied *El Pueblo Mágico*, a social design experiment, to document novice undergraduate teachers’ understandings of the concepts of teaching, learning, and culture—key concepts in teachers’ development of learning and pedagogical practices important to teaching, particularly nondominant populations. I also documented shifts in undergraduates’ theoretical understandings and the mediational tools that helped to foster shifts in their common sense notions. In this dissertation, I referred to the undergraduates’ initial understandings as common sense notions, drawing on the work of Haney-Lopez (2003) and described how these common sense understandings were socioculturally mediated (Cole, 2003; Engeström, 2000). To employ common sense as an analytical tool, I drew on activity theory to help understand how common sense gets (re)constructed and perpetuated across activity systems. I further conceptualized the notion of common sense as the congruence, or nontension, across activity systems. Here nontension is not intended to convey that there were no tensions across any activity systems, but rather that the tensions did not create enough of a disturbance to become visible to the student or to alter the student’s actions. I also employed activity theory to demonstrate the way that individuals can travel across time and space in ways that allow common sense notions to remain relatively unchallenged, thus maintaining common sense.

This congruence across activity systems, settings, and different individual trajectories provides support for Haney-Lopez’s (2003) theorizations about common sense in which (a) anyone who participates in practices shaped by dominant ideology is susceptible to perpetuating inequities through common sense; (b) common sense is so grounded in social practices and dominant ideologies that good intentions alone are not a guarantee that equity work will be done;
and (c) common sense is not easy to overcome, but awareness of the process of its development can allow for shifts in understandings.

In the context of this study, a common sense framing had several affordances for helping the instructional team understand how to mediate teachers’ beliefs and their related practices in ways that were both generative and supportive. Here, understanding that practices are grounded in common sense allows for a generous and developmental view of educators, rather than viewing teacher learning as static and as an individual accomplishment or deficit (Gutiérrez, 2014). With the understanding that we are all products of our histories (Vygotsky, 1978), common sense notions that might not be initially perceived as equity-oriented, for example, can be contextualized and understood in the context of individuals’ personal and social histories. However, common sense does not take away or minimize individual responsibility. Instead, developing an awareness of common sense and its related practices allows teachers to name the practice and to make informed decisions about how to re-engage in the practices differently. Additionally, because common sense is so embedded in everyday normative practices, disrupting common sense involves ongoing and deliberate reflective practices that provide the space for students to examine their own assumptions vis-à-vis the theory and practice of which they have been a part. Also, engaging in reflective practice helps to hold the individual accountable for future actions.

I return to McDermott and Raley’s (2010) argument discussed in an earlier chapter of this dissertation. They posited that researchers, and I argue by extension practitioners, need to be willing to reframe and reobserve their daily practices. Following McDermott and Raley, I posit that reframing daily practices can be powerful for educational and social change but requires people to be “willing to look again and again” at their own histories of language and practice (p.
However, I also argue that more than willingness is required for reframing to occur (to foster reframing). Novice educators need to learn how to design expansive learning opportunities, what tools and forms of mediation support students’ learning, and what kinds of reflective practices will generate ongoing opportunities for them to “look again and again.” With this in mind, I have continued to ask, How do we challenge our own common sense if we are too close to see it? How do we include the students’ everyday knowledge into the classroom? And what do educators need to know, or what kinds of practices do they themselves need to engage in, to create robust learning environments that foster transformative practices? These questions of how are at the heart of my dissertation.

I started this dissertation with a narrative around the intelligence, forms of resilience, insights and cognitive skills of my dad, my mom and my community. As my dad stated, “Lo que no se puede, pues uno se lo tiene que inventar” (what we can’t get, we have to invent). Invention, creativity, ingenuity, complex cognitive skills are at work everyday outside of school settings. On many street corners, car engines are being given a second or perhaps third life through the ingenuity of everyday people. This everyday ingenuity—central to the resilience and sustainability of communities—is found in a range of cultural practices, from tinkering to fixing and making things to the practices that sustain cultural knowledge. The sharing of folklore across families and generations has helped to maintain cultural ways of knowing and learning (Rogoff, 2003). For example, as recounted in my opening story, my uncle and cousins unhesitantly came to our rescue when we were stranded and throughout the drive home engaged us in stories of *La Llorona*. We were engrossed in these stories as we learned. As discussed in various sections of this dissertation, research has shown that cognitive skills are inherent in cultural practices, both formal and informal.
As McDermott and Raley (2011) remind us, to appreciate these practices, forms of resilience and ways of knowing, educators must be willing to look again at the way that everyday forms of knowledge, or horizontal knowledge, can be witnessed, recognized and brought together with school based knowledge to support consequential and equitable learning. Toward this end, we also must learn how to design environments that challenge static common sense notions around teaching, learning and culture. In particular, in order to reimagine classrooms where everyone can be “smart” (Gutiérrez et al., 2009, p. 12), educators need to engage in practices that make evident how common sense views shape perceptions of intelligence and smartness. This work is driven by my desire to support the development of a pedagogical imagination for myself and for others, in which we recognize the versions of brilliance I have come to know through my dad and my mom, and to see this brilliance and potential in the children and families with whom we work.

Through this dissertation, I have attempted to get to the “how” of design and to illustrate the importance of developing these reflective practices and designing for mediated praxis—that is, the intentional organization of a learning environment to bring together reflection and action. I tried to communicate the design of El Pueblo Mágico to practitioners and other researchers in a way that was accessible, as well as maintained the complexity and intentionality of the design. I described three design tenets that emerged empirically as central to the fostering of mediated praxis. In this way, I worked to document the way that the Change Laboratory principles can cultivate a “mirror,” that is, a space to hold and work through inner contradictions to help foster a pedagogical imagination. In addition, the layered learning, that is, the simultaneous learning occurring throughout the ecology and across participants, helped to constitute a community of learners in which the binary of teacher and student roles was challenged. Further, the use of
boundary artifacts helped stitch together both theory and practice across seemingly self-sustaining environments to make evident “learning as movement” (Gutiérrez, 2008). Through studying the process of learning, I worked to “study the life of the intervention” in hopes of helping educators and researchers imagine “more open-ended socially embedded experiments [that are iterative and necessitate] ongoing mutual engagement” (Gutiérrez & Penuel, 2014, p. 20).

Finally, disrupting common sense toward more robust and equitable learning requires understanding that schools are not “neutral settings” but instead are “political sites, for what they do is always mediated by broader structural factors” (Moll, 1998, p. 5). Therefore, reframing and challenging common sense must exist for social change toward equitable outcomes. Without reframing, common sense notions remain powerful because they can be perpetuated by default and, thus, can continue to be misunderstood and underutilized as a resource or a tool to promote expansive, transformation, and equitable learning environments (Nasir & Hand, 2008).

Implications

In the following section, I describe the implications of this study for teacher education, as well as higher education research and practice, and the design of learning environments focused on equitable and transformative ends.

Teacher Education

The implications of this dissertation’s finding are particularly relevant for teacher education and teacher preparation in several ways. Through trying to understand common sense notions around teaching, learning, and culture, I found that novice teachers (a) defined learning primarily through an adult-led philosophy, (b) did not understand that the concepts of culture and learning had a close relationship, and (c) conflated race and culture. For example, in their
definition of learning, many students understood teaching as the dissemination of information and, thus, learning was the “accrual” of information (Daina, Self-Reflection). The related default social organization of learning became more about showing that students were learning through a clear division of the teacher/student roles, with the teacher in “the front of the classroom” and the “students looking at the teacher to show engagement” (Alice, Self-Reflection). In other students’ views of teaching and learning, their expectations were aligned with how the classroom should be organized. With this persistence of common sense notions, it is important for teacher education programs to make theories of learning more central to students’ understandings of teaching so that both teacher and student learning becomes the object of teacher preparation practices.

Students also came into the course without a strong understanding about culture and even less about its relation to learning and cultural mediation in particular. For example, students held narrow and reductive notions that conflated race and ethnicity with culture. Such understandings have important implications for their students’ opportunity to learn, as conflating race with ethnicity and culture can lead to stereotypical notions of students and racialized communities. Of consequence, static notions of culture can foster racialized views and practices about who can learn and how, as well as practices and ideologies that “Other” students of color—both which can potentially foster deficit thinking (Valencia, 2011).

This study also has implications for how race is engaged in relation to culture. Five students in their self-reflections mentioned a shift away from the conflation of race and culture. This speaks to the embedded focus on equity that is in the social design experiment. I argue, complex understanding of cultural mediation and cultural practices can provide entry points into discussions of race for students who may have not previously engaged in multiple conversations
about race and equity, in particular students from dominant communities. When culture is reframed as cultural mediation, it creates a point of entry for understanding the normative nature of school practices. This is particularly relevant because schools reflect White, middle-class values and practices that can help sustain common sense for the current teaching populations, most of whom are predominantly White women as evidenced in the course I studied (Penuel, 2010; Rogoff, 2003). Understanding culture as practice, grounded in a historical context, helps us attend to both the regularity and variance across groups. This more dynamic notion of cultural practices also served as a means for instructors to push on assumptions being made about racialized groups and their learning practices. When culture no longer functions as the property of minoritized groups but rather as lived experiences, students have to engage in sense-making about their own assumptions about race and racialized practices. Thus, centralizing the relationship between cultural mediation and teaching and learning affords a point of entry into discussions of race in classrooms and creates opportunities for White students to disentangle race and culture.

Attending to how race is part of the everyday helps both to address the pervasive silence around issues of race and makes explicit the need to complicate the relationship between learning, culture, and race. As mentioned in the limitations of this study, discussions of race explicitly were not systematically explored or made the target of instruction in the class, but they were an ongoing part of the discussion. This is an important point to be taken up in teacher preparation, as teachers need to know that race and racism are found in everyday and ordinary practices and embedded in all teaching and learning practices (Delgado & Stefancic, 2012). Without this attention to race, preservice teachers may perpetuate the conflation of race and culture, the taboo nature of discussions of race, and “colorblind” views of society (Bonilla-Silva, 2006).
I posit the connection between learning, culture, and race should be expanded and made more central in the class, as issues of race and equity are important to social design experiments. For example, in other instantiations of the social design experiment, particularly at *Las Redes* the prototype for *El Pueblo Mágico*, race was discussed explicitly on a regular basis. This different instantiation of the model brings awareness for the need to make the topic of race explicit and consistent. Explicit examination of race in learning environments needs to be imbued systematically throughout future iterations of *El Pueblo Mágico*, specifically, and in teacher education more broadly. There are many ways to do this. As previously mentioned, learning more dynamic notions of culture can and do, in fact, provide rich openings for substantive discussions of race and how educational practices are and can become racialized. From a design and curricular perspective, making race central can be made a feature in future sections of the courses or, following the UCLA model, there could be a series of related course offerings that extend the opportunity to study race, culture, and human development beyond a single course.

**Design**

A social design experiment grows out of a history of design based research and, more centrally, progressive interventions designed to address educational inequity. It is important to note here that the term social design experiment was appropriated as a reclamation of the term “experiment” and reoriented toward more consequential, equity-oriented, and transformative ends (K. D. Gutiérrez, personal communication, April, 2014). Of relevance to future designs, studying the iterative and sustainable practices of a successful social design experiment can make visible the importance of bridging the gap between research and practitioner and potentially contribute to sustainability and capacity building. For example, much of the data I used for my dissertation was gained and gathered through my role as an instructional team
member. I was both teacher and reflective practitioner and, thus, experienced many of the tensions that practitioners may also experience—including the tension that led to the focus of this dissertation. Similarly, the undergraduates also participating in this social design experiment gained a new understanding of research through their writing of field notes, their self-reflections, and their end of the semester collaborative research project. These practices worked to position all participants as learners and helped us, as researchers, better understand the dilemmas of practice (Shepard, 2000).

Through the design of a social organization that privileged a different distribution of labor—one that emphasized joint activity and distributed expertise—learning and learning in research was expected of all participants. These design principles can help foster practices and dynamism in social design experiments. For example, through the final research project conducted on their own participation at site, suggestions to the activity guides, for example have been adopted for future semesters. Alterations to the syllabi and or activities have been discussed and implemented based on research team reflection and insight. More specifically, through my dissertation research, I too am advocating for potential new ways to approach our practices within El Pueblo Mágico. In this way, the object is always evolving, growing, and expanding to meet the needs of the community and research interests.

**Higher Education**

This study emerged from the desire to understand design principles that can be utilized and adapted to other program settings, particularly precollege programs. In the literature review, I worked to demonstrate the need for design principles that foster student and staff reflection, as well as program level reflection and on-going evaluation. The increasing dependence on precollege programs to address the underrepresentation of students of color in higher education
institutions highlights the need to design teacher preparation programs around robust and equity-oriented approaches (Gandara & Contreras, 2009). This same need is particularly salient in precollege programs and college retention programs in which there is little or no access to professional development grounded in theories of learning, pedagogy, and cultural mediation.

This is also important from an evaluation and sustainability perspective, as minimal data and information are generally collected to describe the effectiveness of precollege programs (Swail & Perna, 2000). For example, Gandara (2001) reviewed 33 K-12 and postsecondary education bridge programs and concluded, “that few programs had engaged in a thorough evaluation of their activities” (p. 10). This lack of ongoing evaluation—or self and programmatic reflection into programmatic structures—has fostered inconsistencies across and within programs (Gandara & Contreras, 2009). The absence of reflective practices such as those in mirroring and refracting processes perpetuates institutional common sense and may unintentionally reinscribe deficit perspectives about first-generation, low-income students of color (Gildersleeve, 2010). For example, precollege programs emerged out of the war on poverty. Although these programs addressed an important need, they have traditionally focused on what students do not know, or their lack of something, such as cultural capital, standard English, etc. (Tinto). Of significance, the standard approaches to these programs have generally taken up a remedial approach to meeting students’ needs in the high school to college transition (Gutiérrez et al., 2010). These programs, although well intended, are not organized around expansive notions of learning that harness students’ expertise and everyday knowledge. More over, recently, Witham and Bensimon (2012) called attention to the need for higher education programs to engage in reflection through a culture of inquiry, in which universities use data as a point of reflection and evaluation toward equity oriented outcomes. The authors found that development
of a culture of inquiry could be challenging as many institutions tended to have feedback loops that tried to fix the problem instead of identifying the problem.

The need for practices that promote praxis is evident. However, many programs do not build this practice of reflection into their daily routines in ways that are dynamic and productive. This can occur for many reasons, including time, funding, and professional development constraints, for example, as well as institutional common sense passed through policies and practices. Engagement in reflective practices and movement toward praxis is a strength of *El Pueblo Mágico*. Implications from this study, I argue, include the use of the design tenets in a way that is grounded in empirical data to develop social design experiments in higher education that harness student expertise and everyday knowledge. Further, similar to the way the preservice teachers came to understand the notion of re-mediation, precollege and college retention program administrators can play an active role in removing the blame from the student toward reorganizing the learning environment. Precollege and college retention programs can work to relocate the role of the institution as central to equitable outcomes. In this way, design tenets from social design experiments can also be used for the development of professional development that necessarily brings together current research and practice in higher education with cultural historical theories of learning.

**Reflection**

Although I do believe that there are implications that can be drawn from my dissertation for the larger fields of teacher education and higher education, I have, in large part, considered this my “selfish” dissertation. Designing for mediated praxis pervaded my everyday musings about education. Through the process of identifying a site and developing research questions for my dissertation, I often received quizzical looks when I tried to explain why I was researching a preservice teacher course to shape higher education practices. A few times, I was even offered
contacts for alternative sites that might have been more “fitting.” From these interactions I realized that I needed to foreground design as a way to connect these two seemingly disparate concepts: questions about developing robust higher education practices and studying El Pueblo Mágico as a dissertation site. To do so, I want to share some personal moments that helped me craft my dissertation questions and worked to inform my interests in college-going and retention practices in higher education.

The first event happened 3 days into my freshman year. The words still echo when I think about them, “If you are stupid enough to work for two dollars a day, you deserve that job.” My classmate said this about the workers affected by the North American Free Trade Agreement (NAFTA). Up to that point I had argued against the majority of my new peers about the negative implications that vulnerable populations had incurred. However, after this comment all I could do was hold back my tears. When I returned to my dorm room, I cried and started to work on a letter to transfer to another university. In this process, I found a personal essay I had written about my family and their struggles to come to the United States. I could not give up this easily. I committed myself to graduate from Colorado College, not only for my family and myself, but for other students of color who would come after and needed to know it was possible.

This was a place of a lot of pain and a lot of growth. It was not until a year later that I started to feel comfortable on campus. I remember the moment this shift started to take place. I volunteered through the university at an after-school tutoring program with a large population of El Salvadorian elementary school students. One of my college peers, who I originally thought was a smart student given his vocabulary and ways of talking in class, also volunteered. In this after-school space, he somehow did not seem as intimidating, and more than that, he acted awkwardly, and the kids did not want to work with him at first. Through my interactions with
this student in an out of school context, I realized that I had experiences and unique skills that many of my peers in the classroom did not. I had always been proud of my cultural practices and of being Mexican, but for some reason the realization that my skill set was actually valued felt new to me. As a student I volunteered with college outreach programs. In this context I played with ideas to figure out a possible platform that would help students, like me, have this realization of the importance of informal, everyday knowledge in a more structured way. I realized retention, in many ways, was haphazard. Too many brilliant students never have the realization that what they bring to the classroom is valuable.

After graduating from my undergraduate program, I eventually started to work with various precollege programs. In each program we did a good job in helping students apply for college and financial aid—and some worked with other skills such as time management and networking—but I knew an element was missing from the programming. We were not preparing nondominant students to navigate predominantly White institutions that promoted and valued middle-class White norms. Through my role in these precollege programs, I tried to engage students in discussions to challenge narrow notions of intelligence and work toward rupturing preconceived notions of race and who is (and is not) able to be smart. Despite my efforts and intent, my attempts failed. I did not know how to facilitate—nor find the resources to learn to facilitate—conversations about race, educational equity, and preconceived notions of intelligence.

To find answers, I enrolled in a master’s program in school counseling. However, I realized theories aiming to support work with students of color often perpetuated monolithic views of the group and ignored the complexity, beauty, resourcefulness, and dynamic nature of cultural practices that I had observed growing up.
I enrolled in my current Ph.D. program because I wanted to find or develop theories that represented what I knew about my community, family, and peers. After 1 year in my doctoral program, I was offered the director position of the precollege program that I worked for previously. I knew that I could not do both: continue my work in the doctoral program and work as the director. The decision was difficult. I knew that one of my goals was to be the director of this type of program. I knew the program well, the great work that was being done, as well as the challenges that I would face. After much thought and consideration, I realized that if I were to accept the position, I still did not yet know how to engage the staff in professional development to incorporate students’ expertise. Nor did I know how to organize the program in ways that would prepare students academically in ways that framed college not as an endpoint, but as a tool for the future. These realizations were at the crux of my research agenda and remain central to my desire to understand and design social design experiments.

Ironically, a large influence on my decision to stay in graduate school was an article (Gutiérrez, 2008) about a program called the Migrant Summer Leadership Institute (MSLI). MSLI was a summer program with a similar format to Upward Bound, a precollege program that I attended. However, MSLI engaged students in academic, critical texts and rich learning by facilitating processes where students made sense of scholarship through their lived experiences. In this way, MSLI legitimized the student experiences as rich sources of knowledge. With this, I started to think about how a program, like Upward Bound, for example, that already had an infrastructure at the university could start to foster and embrace expansive learning and sociocritical literacies. I remember sitting at Starbucks by my house and as I read the article, I wrote in the margins with my dull pencil: “This is why I can’t leave [the program] right now, I
want to have an impact larger than one program.” At that point, I started to realize the potential of research and how it could influence the daily lives of students.

Serendipitously, during the second year of my program, I started to work on the El Pueblo Mágico research team under the leadership of Professor Kris Gutiérrez. In multiple conversations, I repeatedly asked Professor Gutiérrez, “How did you organize MSLI?” Through conversations, I later learned that MSLI had been influenced by the Las Redes program—a Fifth Dimension model and the framework from which El Pueblo Mágico was designed. As a research and teaching assistant with El Pueblo Mágico, I saw the way the project was built from site selection to the development of the course syllabus. I also participated in the research team meetings. This allowed me to be a part of the “behind the scenes work.” Through my dissertation, I hoped to further understand the design of El Pueblo Mágico and to connect my experiences as a precollege counselor with my interests in educational design that harnesses nondominant students’ expertise and knowledge.

In addition to my work for El Pueblo Mágico, I simultaneously had the opportunity to work for the Critical Civic Inquiry (CCI) research team, a Spencer funded project, under the guidance of Dr. Ben Kirshner. CCI focuses on fostering youth voice through a participatory action research (PAR) epistemology. This has been an exciting process because, similar to El Pueblo, I became a research assistant during the first year of the project. Here, too, I was encouraged to think about designing research that extended beyond the university walls and think about how to leverage students’ everyday knowledge in the classroom. Through both of these research assistantships, I have continued to search for answers to the questions from my first year about how to design learning environments.
My combined experiences on these research projects and my historical trajectory through the educational system have driven my work in my doctoral studies, and I anticipate will continue to do so for many years to come. I want to continue to learn how to organize robust learning spaces steeped in theory, research, equity, and mediated praxis. Whether these design principles undergird pedagogical practices in K-12 classrooms, university courses, precollege programs, or extracurricular activities across the P-16 pipeline, as practitioners and researchers we can work together to develop sensibilities that create environments where all students can be smart (Gutiérrez et al., 2010).
REFERENCES


APPENDIX

Appendix A

Excerpt From Pilot Study II-Learning Trajectories
Move Toward Engaging Theory at Site: In the following example, Annie is describing a get-to-know-you activity. My feedback is italicized.

Christian is 8 years old and in the third grade. His primary language is Spanish and although he is quiet, he still engages in conversation and answers questions that people ask him. *What are some examples of the way he answers questions?* From our introduction questions I learned that Christian’s favorite color is blue and if he could be any animal he would pick a cheetah because they are fast.

In this example, Annie described Christian, but she wrote about her impression of Christian, which was a high-inference statement. For example that he is quiet but still engaged in the conversation. The goal for the comment “what are some examples of the way he answers questions” was intended to have her write down actual interactions that helped her draw this conclusion. In the conclusion of CE 2 I also wrote the following excerpt in my final comments to her:

Annie, Thanks for sharing, it seems like you were a bit disappointed with the number of citizens. It is my understanding that this week there will be more citizens. But overall I am glad you had fun. I think it might be interesting to have Christian teach you some words in Spanish or tell him you are learning Spanish. He might think it is cool to be able to teach you, a college student, something too😊 *Something to think about for the next CE, remember to describe what you are seeing. I did see less summary statements in this CE than the first, but I wrote questions in areas that I think could include more detail. It is hard to get out of this habit, but again it will help when you review for your final paper at the end of the semester. Please let me know if you have any questions.*

In the second half of the excerpt I reiterated again the purpose of the questions as places to include more details and reiterated some of the technical guidelines, including a request for the proper uses of OCs. In the following example, my comment is still a technical comment, but it begins to push back a bit on the difference between what Annie was observing and her inferences.

This is also where the problems between Tony and Regina began. She did not want to work
together on the project and complained about having to work with him. She finally agreed and said that she would make up the design if, “you do the rest of the details” with big flailing hand motions to go along with her rolling eyes. She was so concerned with being in control (This is great insight, but since it goes beyond just the observations it would go in an OC) of what went on the she didn’t seem to understand exactly what the project entailed and it took a couple of tries of explaining to her until she finally listened and understood what each of their jobs were to make the project complete. They decided to make a toy chest in a playground. (CE 3_Annie)

If my comments are ignored, the physical description of Reginas ‘flailing hand motions’ and her ‘rolling eyes’ are discussed as the same as ‘she was so concerned with being in control’.

This example helps demonstrate how technical feedback also served to ask students to think about what they were observing and what was being inferred. To reiterate, the feedback was only one aspect of the tools that were used to mediate students learning, but it serves to point out that there was a structure that we were following, that helped me, as an TA, push back.

In addition to this technical aspect of writing, the reflection/analysis section was another built-in structure that helped students move from engaging with students at site to thinking about their interactions and theory. For example in CE 4, Annie expressed confusion as to how the reflection/analysis section was to be used.

I would consider this week as much more fun and successful compared to last week. Working with the boys felt less like babysitting and was more just hanging out and having fun. I was able to enjoy myself without having to really worry about the interactions between the kids. I was happy that even though Jesus said he did not want to write to El Maga, that eventually he did. I like that George wrote that he thought El Maga was cool and didn’t just go along with Jesus because if the two boys were both against writing, the day could have ended very differently. I’m not really sure what else to write in this section because in my previous ethnographies I had been writing about ways to improve next week or what I did not like about the week. However, this week I don’t have any complaints. I had a fun time and was actually a little disappointed when we had to end the game before finishing. I can’t believe how much one child can impact the way the entire day goes and the mood that it puts me in for the rest of the day.

In the bold section, Annie is honest about her uncertainty as to what to do in this section. By saying that “I had been writing about ways to improve next week or what I did not like about this
week” she demonstrates that she was reflecting on the interactions of the day and her role in these interactions, however, her reflections were not grounded in theory. To this question or comment I respond:

*I am glad that you don’t have any complaints... So in future CE’s use this section to tie what you are seeing in site to the readings that we are doing in class. For example, what role did you assume in this activity. Was it a community of learners, adult lead, child lead—how did this impact the learning that was going on. Also one thing is the way the groups were split, not only did this make it difficult to manage as you mentioned in your OC, but what does this do theoretically?*

Here I answer Annie’s question about what the section is supposed to be used for. I explicitly bring in an example of one of the theories by name, the community of learners, and ask her to consider how the theory explains what is occurring at site in relation to the students learning.

There are a couple of things that emerge for me as a TA after reading this. First, even though we mentioned this in class, I could have been more cognizant of the way that theory had been absent from this section in the past four CE’s. Second, I am excited that she felt comfortable enough to ask and say that she did not know what she was not supposed to be doing. As a student, having to admit that we are not sure of what we are doing, is important for learning, but it is not always a comfortable position to be in and to admit to.

In the following CE, CE 5, for the first time theory is mentioned explicitly and by name. In the reflection/Analysis section the community of learners is described.

*In my opinion today was definitely a community of learners. How so? I agree, but use this space to make explicit why you think so. It will both help make sense of the theories but also help with the final paper.*

Because we didn't have the task cards and decided not to read the directions, we together made a new version of Operation that we had a lot of fun playing. Also, because the game was in Spanish Emiliano and Becker were able to teach me words and pronunciations. In dominoes I feel like it was a little more child-lead because I mostly followed the designs and ideas they had and didn't give too much input. Overall I think that the day went really well and I'm looking forward to seeing what happens next week with what citizens I work with and the responses children receive from El Maga and their reactions to the letter.
Okay, so I see here you answered my question, but just to expand on this, what were some additional examples of where learning occurred.

This excerpt demonstrates a couple of things. First, it was only in going back and reviewing the CE’s that I realized that it took 5 CE’s before any theory is mentioned by name in Annie’s CEs. This is in contrast to Kim, who from the first CE was able to incorporate theory into her observations. This contrast, I realize now, is what made me think that Annie “took a little longer to understand the theories”. However, as I will explain below, both of the Ugs had similar timelines as far as when they started to mix practice and theory together. The second comment demonstrates the tone of the CE’s as I pose a question and I realize that she had already answered my question. Instead of deleting the comment, I just recognized that she did address it already and I pose another question. This, to me, creates an interactive relationship that was evident in this CE and in others. The CEs really were conversations that we were having about site.

In the following CEs, I coded for the theories that she used and in 6, 7, and 8 she used theory not only in the reflection/analysis section but also in her Observer comments. In the following excerpt, Annie observed two citizens playing Sim park. In her OC she documents her “in the moment” reflection on theory that she used to document her thoughts and actions.

Mya watched a round or two of the game connect 4, and then came and sat by me and watched George play Sim Park. Once he had the game started, he did not really want to follow the simulation or get directions on how to play the game. Instead, he just wanted to play along and learn for himself. (OC: Immediately when he began the game my mind went to the reading from last week and I realized that he was playing a constructing game. I remembered that the point of the games were to build things and learn through it so I decided against trying to get him to follow the simulation. I felt that I would be hypermediating and I would block the zoped if I interfered**). After about 30 seconds of clicking George exclaimed, “A huge grizzly bear is just walking around in the tree!” Emiliano responded with, “Look over here you can make people stuff!” George clicked where Emiliano said to but first added in, “Don't touch the screen dude.” George clicked random things in random places. For example, adding in 7 gazebos and then a park bench
right next to it…. Jesus yelled over to me, “I win! I win! I win!”

So they seem to be learning, How do feel about letting them play?

As mentioned in class, although the use of the theory was a little bit off, the importance of this excerpt is that it demonstrates that Annie was attempting to use the CE as a meaning making space to understand her actions and the theory. Also in this section my feedback was asking her to think about how she felt about letting the students play. As Annie later explains in her CE, learning to identify hypermediation was helpful and helped alleviate some of her fears of being a teacher.

Another idea taught in class that I’m going to remember for when I begin teaching in my own classroom are the theories of mediation and hypermediation. One of my main fears when I first began in my practicum courses was that I was going to talk too much and stop the students from learning on their own. I was scared I would just give them the answer and therefore hinder their actual learning of the material. Once I learned that this fear of mine had a name, it became a lot easier to face and then figure out how to make sure it didn’t happen. Talking about it during lecture and discussing examples really helped me to understand when hypermediation occurs and how to try to stop it beforehand. Also, I feel that exposing the idea of hypermediation was very important because many professors only discuss positive and helpful tips in the classroom. I think it is just as, if not more important to explain the way teachers can limit learning in a classroom. If I had never learned the concept of hypermediation this semester, I would never know it exists and that my fear was a real thing that could be noticed and prevented. (Annie, Self-Reflection)

In this paragraph Annie describes her fear of hypermediation and how being able to name it was a helpful part of the class. She continues in her CE by saying that she plans to carry the ideas and theories she used in the class with her to her future career as a teacher.

Now that I’m aware of hypermediation I am going to be sure to utilize the theory in my future classroom and attempt to prevent other students from unknowingly hypermediating other student’s learning. (Self-reflection_Annie)

To see the ways Annie began to engage in mediated praxis required that I look at all of her CEs over time. The feedback for this paper is not the cause of her changes, but more so an indication of the ways her CEs were changing in form, as well as how they are structured, with
CEs, in a narrative and a reflections/analysis section, helped this transformation. In the next section, I provide an overview of another undergraduate, Kim, who had a different path as she engaged in mediated praxis.

**Movement from theory to engaging in practice:** In her cognitive ethnographies Kim would pose a question and through the CE and reflection try to answer her own question (Self-reflection_Kim). Interestingly, because she would utilize theory in her CEs, as a TA, it lead me to think that Kim ‘got it’ quicker than Annie, however, in re-reading and coding the CE’s I learned that they actually had a very similar time line in combining active participation, reflection and theory; however I was privileging the use of theory as an indicator of students understanding of theory and practice. For example, in her CE 3 Kim was grappling with a very complex idea of learning as a social process. She discussed two students, Marissa working independently and the other, Silvia, working with a UG to help figure out what to draw. In an Observers Comment Kim posed the question about learning as a social process, she writes:

I get the feeling that Vygotsky prefers Slivias method to Marissa method. His definition of a Zoped calls for collaboration with peers or with mediation from a teacher. Does Marissa’s preference for independent learning lower her potential?

This is a great question and one that can take many students a long time to grapple with and learn how when a student is working individually they are still engaged in a social process. In the same CE, Kim answers her own question:

This week at site, I spent most of my time observing a citizen who preferred independence to working in collaboration with her peers. [Despite different approaches] both girls in the end were successful in reaching the goals of the activity... I wonder at which of the two girls had the richer experience. . . . Vygotsky emphasizes that learning is a social process. When I was first learning about this theory, I think that I would have argued that Mari proved learning does not need to be a social process because she spent her learning time in solitude. I have learned that “social” does not necessarily mean “speaking.” Mari still had to listen to [the explanation of the goals of the project]... . . . She listened to me as I asked her questions about her work. She watched the other citizens around her make their own objects out of clay. She paid attention to the sample
objects and used them to craft her own design. She used the tools available to her, which have been adapted over time to fit the needs of craftmakers: purple knives, light bulbs, plastic sticks [etc]... I do not need to worry about her introvert tendencies or her lack of talking because she can still experience a rich learning environment that falls within the definition of a zoped. (Kim, Cognitive Ethnography 3)

This example shows the way the writing of the cognitive ethnography itself lead to some deep reflective thinking—she was applying what she was learning in class to what she was observing in site. However, I learned from a site coordinator that Kim was privileging note taking over engaging with the students at site. It was with this in mind that helped me understand how reflection and theory alone are not enough. This semester as I re-read Kim’ CE’s I realized that she was really grappling and getting stuck on the concept of hypermediation. As part of the class requirement students had to do a group presentation on the articles for the week; Kim presented on one of the articles that focused on the concept of hypermediation. In reviewing her CEs’ Kim made hypermediation the central theoretical focus in CEs 2, 4, 5, 6, and 7.

Kim grappled with the hypermediation in the following excerpt. In this example she and two citizens were playing a get to know you game where they were talking about their favorite animals. Kim asked Kai what his favorite animals was and below is his response:

`I don't know,' he told us quietly. Mackenzie tried to prompt him by asking what his favorite animal was. He shrugged and remained silent. I tried a different tactic. `What is your favorite animal, Kai. Would you want to be a…spider?’ `Yes,' he answered. `But it would be a poisonous spider.' [OC: Was I hypermediating here? Part of me feels like I was. I was feeding him an answer, and if he felt like that was the answer that I was looking for, then maybe I was feeding him answers in a way. At the same time, he was able to expound on the topic after that, which means my method helped him gain confidence.]

This is great use of the you making sense of the reading and tying it to your interaction with the citizens. –CE2

This was the first time that Kim had brought up the concept of hypermediation. From my response, I obviously saw it as positive because she was grappling with theory and her
observations. However, as time continued, I started to notice that she was really struggling with the concept, but there was an ebb and flow in her ‘figuring out’ the concept of hypermediation.

In the following excerpt, Kim writes about finding a balance between hypermediation and mediation.

I feel as though I have been struggling to find the balance between hypermediating and mediating. It is difficult to tell during instruction if one is hypermediating; I think that most of the definition stems from the end result. If it turns out later on, or after reflection, that the student's potential level was being established through instruction, and if the student was not left to create his or her own potential, then hypermediation stands out…The opportunity to teach a student to play Sudoku turned out to be a helpful indicator of when I could add more to the teaching part and not need to worry about hypermediating. I could see in what I was doing that there was a certain level of instruction that I had to supply and that any extra was unnecessary. I have found that a good way to test when “enough is enough” is to ask the student if what I explained made sense.

Here Kim writes that she has found that one way to ‘check’ for hypermediation is to ask the student. In the feedback I remind her that “even the best teachers hypermediate…and it is in this reflective process that you are engaging in that will help recognize it more readily as you are doing it, it takes practice and you are doing a great job in that!”

This excerpt demonstrates that I was aware that the concept was weighing on her mind, and even though I had made comments, they stayed at the cerebral and hypothetical level. This was evidenced in the CE 6, where once again Kim was struggling with the concept of hypermediation, to the point where she was wondering if she had hypermediated by asking the student to sit at the table:

Do you want to stay on the floor or do you want to sit at a table? I asked. [OC: Asking this question, I thought again about hypermediation. I wanted my tone to remain neutral, to let them make a decision. At first I thought that forcing them to sit at the table would be a form of hypermediation, but looking back, I don't think this could be the case. Hypermediation would be putting a cap on their potential. From what I could see, whether we sat on the ground or in chairs at a table, they would probably have the same opportunities for learning. This was a mere preference. But maybe there is an element of possible hypermediation. If I established myself as the teacher, the one who was making
all the decisions, perhaps the boys would be less willing to make decisions on their own and would rely on me for all the answers. It is a subtlety, but what if this made a difference? Surely where a learning environment is set up will make a difference in the amount and the level of learning.] They told me that they preferred to play on the ground.

Despite the multiple conversation that occurred in the CE’s on hypermediation; Kim continued to grapple with the concept. It was after completing her CE 6 that I found out that Kim was not fully engaging with the citizens at site. I emailed her and asked her to consider not taking any notes at site. It was ironically after a conversation we had in class about how to balance taking notes and participating at site.

Hey Kim . . . I have been thinking about our conversation in class about taking notes in CE's. Your CE's are full of detail and of very rock star quality! However, I did not realize you were taking detailed notes. You have obviously learned to navigate this with the citizens very well. I am wondering if just for tomorrow, you would be willing to take less notes and really focus on the interactions with the citizens. The reason I mention this is I am wondering if having one less thing to worry about (the notes) will make it a bit easier to be fully present in the group interactions and the engage in practice the ideas of mediation that you have been playing with in some of your CE's. This is just a suggestion, but I thought I would mention it since it is in line with the idea of play and learning (but on the side of the CE's). If you do chose to try this tomorrow, let me know how it goes (what you like/don't like about it) in the reflection/analysis section…With this said, I don't expect you to have as much detail in your CE 7, so please don't worry about that aspect, I know you can [write] very detailed CEs.

In her CE 7, I could tell she was a little hesistant and worried about not having as much detail, but she tried it. It was evident that Kim engaged with the students in a slightly different way. For example, she took on the role of a learner or novice—in which the elementary student was teaching her how to play the games. This was the first time she had fully taken on this role, and she discussed that it was uncomfortable for her in her reflection/analysis section.

Unfortunately, at the end of the day, the citizen mentioned that they wanted to go work with another Undergraduate the following week. In her CE she reflected on this interaction:

Even though I was much more engaged and involved in the game-play, I am not sure that this made a difference. I thought that I had had an excellent day at site, but writing this
cognitive ethnography has shown me that it may not have been as successful as I had thought. Personally, I was more engaged and was participating in each game that we played. I enjoyed playing Jenga and her version of Cranium, watching her strategy, and just being around a citizen that was enthusiastic…I wonder now, looking back, if I did not play enough of a role as a mediator. I pretended not to know how to play any of the games…I held back on potential corrections in Guess Who, and I let her create her own version of Cranium. Was this ok or was I not doing my job? I am trying to think through the goals of site….She said that the day was boring and that she wanted to play with a different Ug next week. What is it that I am missing? Where is the balance between freedom and mediation?

This excerpt shows Kim struggling with the various ways she can be a participant in the afterschool program. It is also a shift from her previous CE’s in a couple of ways. First, she recognized she was more engaged. Second, up to this point, Kim had consistently been concerned with hypermediation, what Gutierrez and Stone (2007) define as excess and non-strategic mediation that can detour the student from the learning goals. In this excerpt she asks: Did I not play enough of a role as mediator? She was, for the first time, concerned about not over mediating, but under mediating. Her grappling with the concepts of mediation may have been a result of her changing her role as a participant. As she explains:

after learning that I took ample notes while at [the after school program], Liz encouraged me to spend the next site visit without my notebook. Again, this broke the usual barrier of formality. I did not have to be perfect in regards to note-taking…Instead, the cognitive ethnography writing was a dynamic, almost non-judgmental process… I was left to explore and to think on my own. By taking fewer notes during site, I was able to engage with the [students] more and to work on re-mediating activities. I became more a part of site and less of an observer. Of course, I no longer had the same amount of detail in my CE’s, but I was changing my role with the citizens.

Prior to the citizen’s comment about having a boring day, Kim had grappled with the concept of hypermediation. She was, now in retrospect, almost paralyzed by trying not to do wrong by the students. However, it was not until she engaged with the citizen, and changed her role, that she was able to see that hypomediation, (not an official term but one that Christina made up to
describe the Ugs’ reaction to hypermediation) resulting in under mediating, could also hinder learning.

Both of the undergraduates, Kim and Annie, engaged in a journey toward both reflection and action. Reflection and action are both needed to foster transformative learning and learning that leads to new ways of understanding and embracing theory as Gutierrez and Vossoughi say “we can become conscious of the theory-driven nature of practice and become more deliberate in our use of theory as a tool for organization, decision making and reflection.” (p.104)

This finding was influential in my understanding of El Peublo, because I realized I, as a instructor giving feedback, was privileging the use of theory as a sign of students understanding the concepts from class. Through seeing the way that both undergraduates were both using theory to make sense of site, and site to make sense of theory by the end of the class and indexed in their Cognitive ethnography 8, I was reminded that praxis does not have a set trajectory. Thus, if organizing for praxis, it is central to organizing the learning environment with different points of entry to allow for students to hang onto and play with ideas that resonate with them and allow a point of entry into both theory and practice. This insight and reminder influenced my desire to conceptualize learning as not only a developmental process, but also as a messy process in the learning ecology.
## Appendix B

### Code Book

<table>
<thead>
<tr>
<th>Big Code</th>
<th>sub-code</th>
<th>2nd level</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grouping</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instruction</td>
<td></td>
<td>more than 5 minutes of talk, but not so much about theory but about logistics</td>
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<tr>
<td>Small Group</td>
<td></td>
<td>Students are working in smaller (4-5 student max) in some sense-making function</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td></td>
<td>When students are doing individual work, writing or reading</td>
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<tr>
<td>Whole Group</td>
<td></td>
<td>When there is a large group discussion, but there is no more than a 5 minute segment of one person talking</td>
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</tr>
<tr>
<td>Lecture</td>
<td></td>
<td>more than 5 minutes talking by the instructional team</td>
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<tr>
<td>Transition</td>
<td></td>
<td>a series of transitions that are close to five minutes</td>
<td></td>
</tr>
<tr>
<td><strong>Design</strong></td>
<td>Intention</td>
<td>Explicit</td>
<td>Moments that exemplify language that I think the IT team is using to make explicit the theory in class</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Connection across theory</td>
<td>IT moves to make connections across theory (theories concepts are not isolated)</td>
</tr>
<tr>
<td></td>
<td>Waterfall</td>
<td></td>
<td>Moments when I think the ideas from the IT team are being recognized by the Students (aha moments or moments when they articulate a theory/reframe(this is the most uncertain, but one I am excited about)</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td></td>
<td>Examples of the use of inquiry in the classroom</td>
</tr>
<tr>
<td></td>
<td>Enactment</td>
<td></td>
<td>examples of when the IT is enacting a theory we are discussing in class, this code will often be paired with other codes to show what is being enacted</td>
</tr>
<tr>
<td></td>
<td>Research</td>
<td></td>
<td>Discussion of larger research project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>logistics</td>
<td>logistics coordinating with site or larger research project</td>
</tr>
<tr>
<td></td>
<td>Mediation Tools</td>
<td>Tertiary</td>
<td>moments that may be examples of use of imagination or future tenses</td>
</tr>
<tr>
<td></td>
<td>Repair and Mistakes</td>
<td></td>
<td>Discussion of repair, or when students are allowed to revisit concepts, or are discussing concepts of mistakes and repair in learning</td>
</tr>
<tr>
<td><strong>Emerging Tensions</strong></td>
<td>Long term Project</td>
<td></td>
<td>Tensions about the disconnect between long term projects at site and the flexibility in the theories we are teaching</td>
</tr>
<tr>
<td></td>
<td>Grades</td>
<td></td>
<td>Discussion around grades, or grading process. This will aid in developing common sense</td>
</tr>
<tr>
<td>Concepts</td>
<td>Common Sense</td>
<td>Moments when common sense can be interpreted but not made explicit</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>--------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Tolerance For Ambiguity</td>
<td>Close to common sense, but specific to where sense making is occurring/frustration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Learning</th>
<th>Discussions around learning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IT</td>
<td>IT initiated</td>
</tr>
<tr>
<td></td>
<td>Process</td>
<td>Discussions that refer to learning as a process</td>
</tr>
<tr>
<td></td>
<td>SI</td>
<td>Student initiated</td>
</tr>
<tr>
<td></td>
<td>Philosophy</td>
<td>Discussions around the need to learn the philosophy (why) of learning and actions in the classroom</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Teaching</th>
<th>Discussions to what a teacher is, or the role of a teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IT</td>
<td>IT initiated</td>
</tr>
<tr>
<td></td>
<td>SI</td>
<td>Student initiated</td>
</tr>
</tbody>
</table>
### Appendix C

#### Example of Grouping Classification Log

<table>
<thead>
<tr>
<th>Time</th>
<th>Min</th>
<th>Classification</th>
<th>W3/m</th>
<th>Tangible, visible tools</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-10</td>
<td>5</td>
<td>Lecture</td>
<td>Artifacts: Prompts, any tertiary talk?</td>
<td></td>
<td>Re-watch video</td>
</tr>
<tr>
<td>10-20</td>
<td>10</td>
<td>Small Group</td>
<td>Students discuss: PP: PS there is not right answer</td>
<td></td>
<td>Watched video and revisited what did last time, there was not a lot of talk between students so has overlap with individual, but ultimately did small group.</td>
</tr>
<tr>
<td>20-30</td>
<td>10</td>
<td>Large group and Lecture</td>
<td>PP: so what did you all do for language in this activity? (also followed up with questions about alt. POV) SR: discussion around direction of talk in video and if it should be a 1 or 3. IS: We are doing this because you are going to interact with kids, and we what you to think about the complexity of what is going on in the space as well as start o hone our eyes to what is happening.</td>
<td>*a lot of this section was guided by the hand out (SOL protocol)</td>
<td>*this section is not so much a lecture but a more one directional (walk through protocol) talk than normal so marked both.</td>
</tr>
<tr>
<td>30-35</td>
<td>25</td>
<td>Large Group</td>
<td>PP: remember, COL is over a period of time so no judgment. what did you see in the first time you saw the video? SR: cute, on same level, students engaged. PP: how did this change SR: thought it was more of COL, and realize it is more student centered. SR: How easy is it to see a col?, So if the teacher had</td>
<td></td>
<td>*explicitly say why use the protocol, *A lot of student discussion around COL, this is where ms felt that she could feel student confusion in her bones. *Discussed developing an analytical eye.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
redirected talk in Spanish would that be a COL? Is that a COL?

Lynchpins e.g: Anthony: would it be more COL if the teacher had redirected the question asked in Spanish to the class. Ab what do you think? Anthony clarifies and restates question. AB redirected it how? Anthony by translating and asking the group. Starts to answer his own question through talking it out. AB; do you agree?

<table>
<thead>
<tr>
<th>Time</th>
<th>Duration</th>
<th>Group</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>10</td>
<td>Small group</td>
<td>PP: What are you thinking now that you have read ZPD, gives example of rock climbing: how might this be a COL and how does this connect to ZPD.</td>
</tr>
<tr>
<td>30-40</td>
<td>10 (7)</td>
<td>Larger Group</td>
<td>PP: Anyone want to share, especially connections to ZPD and COL SR: beca-thought it would be more collaborative, just sharing information but outside of ZPD. (correction): Want to be in ZPD, now what you meant but language is important but what I like about it is… SR: we also talked about the intentionality in organizing, institutions and tests. Correction? How do we also understand learning outside of institutions. SR: If we are trying to teach at potential, isn’t it hard to teach in curriculum and standards? AB: we will try to figure that out by may, and if you do let me know.</td>
</tr>
</tbody>
</table>

About prompts, They are starting to get messy, in that

I didn’t realize how much large
<table>
<thead>
<tr>
<th></th>
<th>Small Group 5, 10</th>
<th>Large Group 10, 25, 10</th>
<th>Individual</th>
<th>group discussion we had, it felt like there was a lot of good conversation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>some are primary, some are follow up some are corrections maybe. But I feel like I am going to need to expand this chart out, but not sure how to do it yet. *This is a day that I am very excited about for a couple of reason, I think It is a great example of questions that are searching for a right answer, they are confused and this is the class that led MS to think about her own teaching practices. There is a shift in her approach after this class. Also</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix D

Excerpt From Overlaying Codes and Gutiérrez and Vossoughi (2010) Article

7- p 101
“And how can research become the context for reflecting on and developing teaching and learning practices that are oriented toward social justice and powerful forms of learning for both teachers and students?”

Haha, this is essentially a more elegantly worded version of my RQ☺

Learning Ecologies (Design).
I started to use this term because I think that the learning environment, or even activity system does not make explicit the interconnectedness of the designed environment. I think that one of the ways that this can be made more explicit is the notion of mediated boundary crossing. I don’t think I have ever read this term, perhaps in the review I did of boundary crossing, but the notion of it being mediated and again the design behind it is what I am trying to communicate.

Social Design Experiments:
1-p.100-101
One of the long-standing challenges of pre-service teacher education, at both the undergraduate and graduate level, has been the nonalignment often found between the theoretical and pedagogical tools appropriated in the university classroom and those at work in schools and classrooms. In our work (Gutiérrez, 2008a; Gutiérrez, Morales, & Martinez, 2009), we have tried to address the nonalignment and contradictions that are inherent in, as well as between, all activity systems (e.g., schools, teacher education programs, class-rooms) by designing **learning ecologies** in the university and the community organized around a coherent set of principles of learning and development and multiple forms of mediation across both settings; of significance, these learning ecologies are co-created and grounded in the cultural historical practices of the communities involved.

*What does this tell me? Why is this important?*
Speaks to the need to have aligned theories and pedagogical tools across activity settings (I have talked about this previously as “congruence”). To be able to engage in this learning in teacher education (pd) need to purposefully design learning ecologies (This is the first time I realized the article also used learning ecologies-I knew I wasn’t making stuff up). To be an intentionally designed learning ecology must have “coherent set of principles of learning and development”, multiple forms of mediation across settings (this speaks to mediated boundary crossing) and have to be co-created (this one I do not have as much on, however it is in the notes from the first semester when we were establishing site).

-Possible Codes:
- For alignment (enactment, waterfall)
- For intentionality (design codes, mediational tools, Tolerance for Ambiguity)
“The social design experiment that seeks to create and study change (Gutiérrez, 2008a; Gutiérrez, Hunter, & Arzubiaga, 2009). Organized around equity-oriented and robust learning principles, social design experiments are oriented toward transformative ends through mutual relations of exchange. Grounded in a humanist approach to research and a cultural historical approach to learning and development (Cole, 1996; Cole & Engeströöm, 1993), this interventionist research maintains that change in the individual involves change in the social situation itself (Engeströöm, 2008b). By understanding the individual and her or his cultural means in relation to her or his contexts of development, this approach contests the tendency to invoke the Cartesian divide between the individual and the social.

Why is this important to my diss?
This again speaks to the dynamic nature of the project that is simultaneously engaged in research, reflection and implementation. For the part about the individual involves change in the social situation, this again goes back to the use of chat to organize for the activity systems, but with the multiple points of entry, there is a different individual trajectory. This then again ties to the messiness of the process. This is where the question that I asked Engeström fits.

Codes:
- IT team meetings (data sources)
- Mutual relations of exchange (IT learning, toa, waterfall)
- Common Sense, meditational tools, shifts in thinking about teaching, learning and culture

9-P.102
...we advance a different vision of social change in which the term experiment is reclaimed and reframed as open and creative, in ways that create spaces to experiment pedagogically, to design collective Third Spaces that heighten the potential for deep learning to occur and for the development of powerful literacies that facilitate social change (Gutíerrez, 2008a). From this perspective, change necessarily and fundamentally includes transformation of the researcher; her or his methods, tools, and dispositions; as well as the relations with participants in the focal activity and community. We have used the term social design experiment in ways similar to Engeström’s “change laboratory” (Engeström, 2004; Gutierrez, Hunter, et al., 2009) to build on and draw some important distinctions from “design experiments” employed in education (Brown, 1992; Collins).

Why is this important to my diss?
This speaks to the need to understand shifts in student thinking. This again goes back to my understanding of rupture of common sense, teaching the teacher to be researcher in the way that it helps them see the way inequitable practices are indexed in daily life, practices and language. By looking at the activity systems as a change lab, we can understand the tools as a mirror to help encourage self-reflection and rupture. It is crazy now I developed the codes without having looked at this article in a while and re-reading it, it is almost like a map to my diss codes. I am using different terms but it comes back to the notion of my apprenticeship in the model. Again all I am doing is making some of the practices and ways of organizing explicit. (the rest of this paragraph goes on to talk about the dynamic nature of the design and importance of engaging and addressing the contradictions).
Design as re-mediating activity. The social design experiment adds an important dimension to teacher learning and teacher education research, as it strategically designs robust learning environments with transformative potential for teacher educators, teacher apprentices and their students, and the institutions in which they participate. The object of university and community/school/teachers’ work is to engage in joint activity to redesign the learning ecology so that ongoing opportunities for all participants to engage in robust learning practices are the norm; where interrogating historical, structural, institutional, and sociocultural contradictions is viewed as generative and as an expansive form of learning.

Why is this important?
This restates the importance of intentional design, with many points of entry to learning with the intention of self-reflection of self and systems.

Historicity. Social design experiments are grounded in historicized understandings of the normative practices under examination. This focus is critical if an equity-oriented, humanist approach to inquiry is to ensue...A historicized approach could also focus on a school’s history of practices in a particular ecology. This project would entail an archaeological approach ...Our own empirical work in schools reveals that teachers, administrators, and relevant stakeholders are rarely provided the opportunity to influence and reflect on mandated curricular and administrative policies and practices, to examine their role in the change process, or to understand the social and cognitive consequences of policies and practices and even less opportunity to make sense of how the constellation of policies and practices that organize their work operate in relation to one another or function collectively toward productive change (Crosland & Gutierrez, 2003; Gutierrez, 1992; Gutierrez, Asato, Pacheco, & Olson, 2004).

Why is this important?
Teachers, stakeholders often don’t get a chance to see and reflect upon their own histories, practices an the way that this reflection, and therefore changes in action, can move collectively toward productive change.
participants’ practices within and across communities. In contrast to approaches that privilege deficit explanations for human behavior, we take a humanizing approach that focuses on people’s history of involvement with the valued practices of their communities and the routine activities of everyday life, for example, people’s history of involvement with the institution of school and its practices (Gutierrez & Rogoff, 2003). The mediating role of culture in activity (e.g., cultural practices) provides a window to help participants examine held assumptions about communities, their practices, and their participants. Indeed, complexifying or demystifying normative conceptions of cultural communities and their practices is a core activity of a social design experiment. Thus, this approach accounts for within and across subgroup differences in ways that do not essentialize or define groups such as English learners and cultural communities monolithically and fundamentally attends to how issues of race, ethnicity, language, mobility, culture, gender, and power are addressed in the inquiry project.

Why is this important?
Similar to above, this speaks to the recognition and rupture that can happen through a SDE, however, what is more explicit here is that it starts with the individuals experience (at least at the undergraduate level). Through mediation and cultural practices. Here is a way to highlight my tensions with some instantiations of critical pedagogy where we start with “an other”, or move down the path of guilt or offensiveness. This is a place were it is like a critical comadre, safe, but you will get pushed back on. Students need to feel safe to communicate their thoughts in some way to be able to understand where they are and who to best push back on them. This is where PG has taught us that cultural practices is another way to enter into discussions or race. To push back on the conflations of culture and race. **I thought I had gotten the emphasis on inquiry through another project, and I totally did and also still think that is and continues to be a way that I make sense of this project, and is a huge influence, but in rereading this article with a lot more care, I realize how often the language around inquiry is present and not only present but how fundamental it is.

Codes:
• Self-reflection, inquiry project
• Mediation, cultural practices, regularity and variance.

17 p103
Furthermore working to generate a conceptual vocabulary for pedagogical practice allows us to name, recognize, and therefore make more conscious decisions about the moment-to-moment organization of learning. In this way, we make theory a powerful tool for practice rather than assuming it to be so. This practice opens theory to appropriation and revision based on the realities of local practice.

Why is this important?
Again, this goes back to the use of language and having the students say the theory so that 1) we can understand how they are making sense of it and 2) also so that they are continuously applying it, naming it, so that it can later be used as a intentional (conscious) tool and choice on who the theories are being utilized in the classroom and site.

**Mediated boundary crossing**
is the design of the tools that move across the environment or that promote thought across the environment, which in a non rigorous claim I think it would be all of them: guiding questions (IT and 4411), CE (It, 4411, site), maybe there are the two biggest ones. Learning happens across all environments.

2-P.101

(1) “In line with a cultural historical approach to learning and development (Cole, 2003; Cole & Engeström, 1993; Engeström, 1987; Vygotsky, 1978), teacher learning is necessarily distributed and examined across a minimum of two activity systems in which teacher apprentices document children’s learning trajectories in situ, as well as their own. (2) By accounting for participants’ shifts in participation in learning practices across time and the forms of mediation at work, students, teacher educators, and researchers can better understand the learners’ sense-making processes, including how new theoretical and pedagogical tools are appropriated and employed.”

Why is this important?

Similar to the quote above, intentionality, mediated boundary crossing and the learning ecology is becoming apparent. However, what I am focusing on is an additional activity system, which is the instructional team (research team). I worry a little about the wording that I use because I do want to bring in a lot of language around the site, but it is important. On the flip side, I do think that if we can understand how we as graduate students are learning deeply, there might be ways to carry this over to apply to undergraduate/teacher education. In this way, I can see the way the IT team is learning and talking about theory and the way that this is getting or not getting adopted by the students in their language and discussions about site. For the second line, part of the design is to understand the way that participants shift in their thinking, discussion and enactment of theory and practice. This for me includes the ideas of Teaching, Learning and Culture.

Possible Codes:

- Intentionality (design, toa, mediated boundary crossing, enactment)
- Shifts in thinking (Toa, Teaching, Learning, Culture, Mediation—Larger code for use of theories).
- For the way the ideas start to be engaged by undergraduates (waterfall).

5-P.101 (column 2)

As Erickson (2006) pointed out, the danger of such noninterference—coupled with the privileged view often afforded the “researcher”—is that the “local work of daily social action is described by the ethnographer as if it were effortless, taking place in a universe from which social gravity is absent” (p. 243). As educational researchers and teacher educators, participating in the practices we study—stepping into the messiness, pressures, and joy of pedagogical work—opens our interpretive sensibilities to the tremendous effort and struggle this work involves. Erickson suggested that by sharing in the action and cognition of practitioners, that is, “studying side by side,” we might develop more honest accounts of cultural production and reproduction that move beyond portraits of social life as either weightless or over-determined (Erickson, 2006, p. 255). In this way, a humanist approach to research may offer dignified, nuanced portraits of social actors; the historical constraints we encounter; and the spaces available for history making,
improvisation, and change in the way we conceive of teaching students from nondominant communities, as well as their potential.

Why is this important?
In a learning ecology, the tools that are being used serve multiple purposes, most specifically the CE and Guided reading work in this way. For example, CE help undergraduate learning and also allow the research team to learn the way students are engaging in sense making and work as data for the research project. The Guided Reading question, help guide the Ugs, but work as a sense making tool for the IT. Not only the use of the tools, but also teaching teachers to learn learning, teach and culture is indexed provides points of checking oneself and places to engage in self-reflection, hopefully beyond class.

Possible codes:
  • Inquiry, meditational tools, self-reflection.
  • For the messiness (process of learning, teaching, tensions grades, repair).

13 P. 102 (column 2)
1) In contrast to the traditional remedial approaches to instruction previously addressed, the notion of re-mediation— with its focus on the sociohistorical influences on students’ learning and the context of their development— involves a more robust notion of learning and thus disrupts the ideology of pathology linked with most approaches to remediation. 2) Instead of emphasizing basic skills and problems as located in the individual, re-mediation involves a reorganization of the entire ecology for learning and “a shift in the way that mediating devices regulate coordination with the environment” (Cole & Griffin, 1983, p. 70). Development here involves “systems reorganization” in which designing for deep learning requires a “social system’s reorganization” (Cole & Griffin, 1983, p. 73), 3) where multiple forms of mediation are in play. The concept of re-mediation constitutes a framework for the development of rich learning ecologies, in which all students can expand their repertoires of practice and rupture the encapsulating practices of schooling (Engeström, 1991).

Why is this important?
I hadn’t thought about it in this way, but if the first mention of sociohistorical influences is thought of as the UGS influences as well, then the notion of mediated boundary crossing is already embedded in this section. I just need to explain with at it is, or at least what it is as I understand it. And also I want to make a distinction between bringing in students sociohistorical influences (students bringing in ideas that they have learned from home) and mediated boundary crossing with a contradiction between activity systems that creates rupture. The first is a way of organizing, the second is explicit to learning. 2) this is a shift in the week 9 in the discussion about where the problem is located. It is also is the shift of teaching to reorganizing and expansion of what counts as knowledge and what is learning and informal learning. 3) the other thing would be to think about the ways that we are organizing the classroom to reflect the multiple points of entry (tools)

1) common sense, toa, rules and norms (rupture)
2) knowledge, re-mediation, culture, learning
3) Enactment
However, it is not the lifting off itself that constitutes consciousness. Simply moving between shop floor and an empty laboratory space or university classroom and school site may not facilitate the kind of deep reflection necessary for creating equity-oriented and meaningful change in work and educational environments. Rather, it is the artifact-rich environment—the material, conceptual, and human tools made available for and constructed within the laboratory—that mediates the process of reflection and action.

These tools are co-constructed by practitioners and university researchers, an approach that builds on Vygotsky’s method of dual stimulation. “In these experiments, the subject is put in a structured situation where a problem exists and the subject is provided with active guidance [italics added] towards the construction of a new means to solve the problem (Engeström, 2008a, p. 2). Here, active guidance is not offered by researchers/educators simply because they are the “researchers” in the setting. Rather, their ability to guide emerges from experience conducting and thinking deeply about the kind of work in which reflection and dialogue are facilitated and new communicative practices and forms of action among local participants are generated. At the same time, local practitioners have a privileged view of “the way things work” on the ground. Thus, the relationship between university researcher and practitioners is not free of asymmetry. But this asymmetry—born of differing histories with elements of learning activity—becomes a resource for analyzing and constructing potential solutions together. Thus, the social organization of social design experiments privileges joint activity among participants with expertise in distinct practices as fundamental to movement, learning, and change.

(Ideas) Mediated boundary Crossing 1) across IT class, Class 4411, personal to LE. What does mediated then mean, it means the tools that are assisting, perpetuating, facilitating self-reflection and a change in action toward more equitable outcomes.

Codes:
Self reflection, inquiry, toa, mediation, prompts.

Inquiry
Also the use of inquiry also caught my attention. It was much more prominent in the article than I remember it being.

3- P. 101
“As we will elaborate later in this article, participating in what we term “social design experiments”—cultural historical formations developed with and for nondominant communities designed to promote transformative learning for adults and children—provides a new model for teacher learning.1 Through the use of cognitive ethnographies (Hutchins, 2003; Williams, 2006), questions for consideration for course readings, a jointly authored data-driven research report, and a self-reflection paper, we also documented pre-service students’ appropriation of theoretical concepts of learning and development and content knowledge in pedagogical practices with children from nondominant communities.”

Why this is important?
El Pueblo and Las Redes are SDE’s to look at transformations of understanding ways of engaging with non-dominant communities. Multiple forms of mediation are used to engage in this ‘self-reflection’ process. Some of the tools are mentioned here, so I can expand what these look like.

Codes:
1. Shifts in thinking (Toa, Teaching, Learning, Culture, Mediation—Larger code for use of theories).
2. Points of entry: meditational tools, prompts, inquiry
3. For joint work perhaps grouping

4-P.101 (column 1)
“Grounded in expansive notions of learning and mediated praxis fundamental to a transformative education for students from nondominant communities, the social design experiment provides persistent opportunities for reflection and examination of informal theories developed over the course of participants’ experiences as students and teachers in apprenticeship. Such reflection is necessary for teachers to develop a coherent and orienting framework for teaching and learning that has both heuristic and explanatory power. We hope to illustrate how cultural historical concepts of learning and development supported “lift offs” (Vossoughi, n.d.)”

Why is this important to my diss?
The examination of informal theories is what I am talking about with the idea of common sense. I am arguing that through the inquiry (self-reflection processes), students are asked to reflect on their “informal theories” and with the prompts, low-inference questions, students engage in new ways of seeing (this is McDermott’s new ways of seeing, Vossoghi’s lift offs and Cole’s rupture of old). I want to take a similar approach to this line of thinking and explain how this can happen theoretically with CHAT with particular attention to contradictions (as a place of growth). I think that looking it through a chat lens there is some advantages to thinking about how to organize (design). It also provides some way of thinking about the activity system and the individual history and trajectory.

Codes:
• Common Sense (rupture)
• Inquiry
• Shifts in thinking (teaching, learning, culture)

12-P. 102 (column 2)
Cultural historical views of learning and development have provided new approaches to extending students’ learning that have been employed to rethink education and to imagine and design new ecologies for teaching and learning. We employ the cultural-historical concept of remediation (Cole & Griffin, 1983; Gutiérrez, Morales, et al., 2009) as an organizing design principle that serves a starting point for reimagining what teaching and learning can look like.

Why is this important?
This speaks to the importance of imagining alternatives. (This reminds me of a section where students start to ask what does this look like in schools, and [student] mentions that it is about bringing in the theory).
• Shift in language about teaching to creating learning environments (teaching, learning)
• Mediation (tertiary)
• prompts

14-p. 102

Contradictions. Stress points are inherent in all activity systems; teacher education is no different. The social design experiment, by design, anticipates contradiction within and across activity systems. One central design principle privileges understanding and addressing the contradictions that constrain opportunities to develop powerful forms of learning or that give rise to inequitable learning environments (Gutiérrez, 2008a). However, the social design experiment must also serve as a context of critique where resisting, challenging, and questioning the contradictions and their solutions serve as openings for learning.

Consistent with a cultural historical activity theoretic approach (Engeström, 1987), this attention to contradictions challenges the tendency toward simpler, less nuanced explanations of the practices of students from nondominant communities, as well as beliefs around long-standing dichotomies in educational research, for example, quantitative and interpretive approaches, the researcher/researched, school and home, and dominant and nondominant communities (Gutiérrez, 2006). It also attempts to work the contradictions that emerge from conceiving, studying, and implementing social change as either top-down or as bottom-up projects that minimize the link between local and global policies and practices, as well as proximal and distal influences. In this way, social design experiments attempt to work within the dichotomies of top-down and bottom-up projects by

Why is this important?
Contradictions are happening on two different planes, but they are interconnected. Duh, but again just making it explicit. Even if we are addressing the individual rupture of common sense, this is being translated politically and beyond the semester. This is where acknowledging that we are only in one semester is important because what we are trying to do is change fundamental points of view that as we can see in literature and other places as pervasive. This is why like so much the idea of common sense. It can’t change in one semester and so, this also highlights the bumpiness of the way we learn, the messiness, the move from understanding a concept cerebrally, to being able to repeat it, to being able to enact it, to re-learning it in a deeper way, to questioning ourselves to see if we really understand it. This is the level where M and I were. This is where the idea of rising to the concrete is, this is why it is important to look at Engeström cycles of contradiction not only as a collective for organizations but as applicable for individuals, (which I think is similar to some of the theories of Piaget, in particular disequilibrium), but it opens it up in a messier way. And to be honest, I don’t know disequilibrium very well, but I think it is making space or both it is not rupture, nor it is collective or movement all of the ways I am defining learning.

Codes:
1. re-mediation, mediation, culture,
2. Common sense, grades, toa, push back, forms of mediation, self-reflection.
Research
6-P. 101 (column 1)
“Indeed, the researcher as a collaborative, reflective “observant participant” may help make visible the practices, meanings, and contradictions that often become invisible to those closest to the action. In this sense, “neither the outsider nor the insider is granted immaculate perception” (Erickson, as cited in Cochran-Smith & Lytle, 1993, p. ix).

Why is this important?
Again this goes back to the importance of “finding new ways of seeing”, so how do we organize for this?

• Teacher as learner, reflection, Prompts (how do you know)
• Meditational tools

10-p .102
“In many ways, the social design experiment is a hybrid methodology that builds on venerable traditions of democratizing inquiry in which research is no longer the property of the more privileged researcher but rather is a co-construction with stakeholder participants. A distinguishing feature, how-ever, is that here the researcher as an involved participant can play an important role in the organization of mediated praxis that propels the potential for change in the participants; their practices; and their social contexts of development, including the university. As a democratizing form of inquiry, social design experiments are political projects organized around the development of an equity-oriented, humanist research agenda. As we advance this form of research, we believe it is important to highlight the principles that orient and help organize the work, always mindful of the need to situate the project in ways that privilege the standpoint of nondominant communities to whom the learning project is oriented.

Why is this important to my diss?
Again speaks to the need to teach the teacher how to understand her/his classroom through ongoing practices in the environment. 2) It is also a discussion around the role of the researcher, this is something that impacts this dissertation in many ways, first as the research team and IT team involvement in the project, but also, me as teaching and researching the class. This quote might be something that I should bring into my methods 3) always being mindful of the ultimate desire to benefit nondominant communities speaks to my desire to look at changes in discussion around teaching, learning and culture. I think these, perhaps subtle, shifts in teaching and learning allow ugs to recognize for example informal learning and the role it can play in the classroom. Given the resources that students bring with them that are often unsolicited in the classroom, this may promote more equitable practices in the classroom because the teacher can understand their value and perhaps start to reconceptualize who can be smart. Also by being willing to learn as a teacher, this also promotes more equitable practices because…students have more buy in into the classroom, home practices may be honored and again students can be repositioned at experts in various parts of the class (re-imagining smartness). The shift in understanding culture and cultural practices also aids in more equitable practices because students de-conflate race and culture, recognize they too have cultural practices and see the dangers of stereotypes and learning styles and the importance of finding ways to understand student cultural practices by asking them.
Codes:
- Inquiry, self-reflection
- TOA, layers of learning (waterfall, enactment)
- Teaching, Learning, Culture
Appendix E

Self-Reflection Prompt

“The last section of your final paper requires you to include an individually written self-reflection paper. This will be emailed to the instructional group separately by each of the group members. The purpose of the 3–4-page double-spaced self-reflection paper is to focus on your own learning and development throughout the course. Describe the aspects of the course/practicum that were most instrumental to your learning and that helped you link theory and practice. Use the following as guiding questions, though you may also want to focus on other aspects of your experience in class and at site.

- In what ways has this class changed, challenged, or confirmed ideas you had about learning? About the role of culture in learning?
  - How has your understanding of how people learn changed over the course of this class?
  - Consider our discussions of culture in which culture is not equated with ethnic or racial description. How has this notion of culture (e.g., funds of knowledge) shaped your understanding of learning in schools? How, if at all, has it influenced how you think about your past experiences of schooling?
  - Think about the readings and our discussions on language hybridity and literacy. How have the readings contributed to your understanding of these concepts and the way you engage with children at site or in general? For the way you think about learning or cultural practices?

- How have ethnography and the ethnographic skills you have developed helped you capture your own learning experiences, as well as the experiences of children at site? You may want to look over your cognitive ethnographies and discuss the ways your descriptions and discussions about the children, their community, and about the notion of difference, for example, might have shifted across the semester.

- How have the readings and class discussions of learning and re-mediation shaped your understanding of the issues facing teachers and students in schools (and/or even in higher education)? How have they shaped your understanding of your own role in these issues?

- Feel free to include any other ways this course may have influenced you as a student, educator, and human being.” (El Pueblo Mágico Website Archive)
Appendix F

Written Instructions for Response to Reading

During the course of the semester, you will be required to complete all of the assigned readings. We expect that you will complete the readings prior to your arrival to each class, prepared to engage in a thoughtful discussion of the concepts and ideas introduced in the assigned chapters and articles.

Additionally, on designated days (see course calendar), you will also complete a response to the readings. A prompt or question will be provided to you on the course website. **Please draw thoughtfully on the reading(s) to craft a clear, well-written, one page (double-spaced) response to the prompt or question.** Bring a hardcopy of your response to class to share with classmates and the Instructional Team. These will be randomly collected and graded during the semester. *(El Pueblo Mágico Website Archive)*
### Appendix G

**List of Responses to Reading Prompts**

<table>
<thead>
<tr>
<th>Date</th>
<th>Required Reading</th>
<th>Response to Reading</th>
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<tbody>
<tr>
<td>2 M</td>
<td>Rogoff, B. (1994). Developing understanding of the idea of community of learners.</td>
<td>Response to Reading 1: Rogoff’s Community of Learners model asserts that learning is a process of transforming participation over time where adults make a “self-conscious effort to produce and manage learning” (p. 213). Based on these assertions, can you describe a time when you participated in a Community of Learners? Explain why you think your experience represents Rogoff’s model. Note: We know this is your first response to reading, so it is not as important to have the right answer, but to play with the ideas and make sense of the theories presented in this course.</td>
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<tr>
<td>3 M</td>
<td>Vygotsky, L. (1978a). Interaction between learning and development, pp 79-91</td>
<td>Response to Reading 2: Vygotsky says the zone of proximal development is &quot;the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers&quot; (p. 86). What does this mean in terms of how he is conceptualizing the relationship between Learning and Development? Now take a moment to consider how you've been thinking about the relationship between learning and development. Write about how Vygotsky's point of view aligns or doesn't align with your thoughts up 'til now.</td>
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<tr>
<td>3 w</td>
<td>Bransford et al. (2001). How people learn, pp 3-26.</td>
<td>Response to Reading 3: What connections do you see across the three readings (Rogoff, Vygotsky, Bransford), and what are the implications for students' learning? How are you starting to imagine your role at El Pueblo Mágico?</td>
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| 4 m  | Moll, L.C. (1998). Turning to the world: Bilingualism, literacy and the cultural mediation of thinking. | Response to Reading 4: Moll writes, “Schools can be thought of as socially created settings to make broadly available important resources of the culture, especially those than can mediate our thinking in powerful ways, such as literacy and mathematics. Perhaps for this reason, as critical theorists have claimed for a long time, schools are never neutral settings, they are
political sites, for what they do is always mediated by broader structural factors, and their social practices carry plenty of ideological baggage, a point I want to consider, even if briefly, given time constraints” (p. 5). How does the conceptualization of mediation Moll presents here help you think about your own experiences with schooling?

<p>| 5m | Vygotsky, L. (1978b). The role of play in development, pp 92-104. Chabon, M. (2009). To the Legoland station. | Response to Reading 5: Drawing on Diaz and Flores (2001), Chabon (2009) and Vygotsky (1978), how do these readings (paying particular attention to concepts such as mediation, the Zone of Proximal Development and how play &amp; the imaginary situation are inextricably linked with these notions about teaching &amp; learning) help you think about the social organization of El Pueblo Mágico now that you have attended orientation? |
| 5w | n/a | |
| 6m | Stone, L. &amp; Gutierrez, K. (2007). Problem articulation and the processes of assistance: an activity theoretic view of mediation in game play. | Response to Reading 6: How would you describe the differences between the forms of assistance used by Jossey and the ensemble of Mike and Rick in the after school setting? In your discussion, make sure to address the notions of next step assistance and mediated assistance |</p>
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<th>Week</th>
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<tr>
<td>7m</td>
<td>Gutierrez, K. &amp; Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice.</td>
<td><strong>Response to Reading 7:</strong> Gutiérrez and Rogoff (2003) offer an approach to “get beyond a widespread assumption that characteristics of cultural groups are located within individuals as ‘carriers’ of culture” (p. 19). Explain what these authors mean, what conceptualization of culture they offer and how/why they argue the notion of cultural learning styles is a problematic idea.</td>
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<tr>
<td>7w</td>
<td>n/a</td>
<td>“NO reading due. We will continue with Gutierrez, K. &amp; Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice”. (website)</td>
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<tr>
<td>8m</td>
<td>Cole, M. &amp; Griffin, P. (1983). A socio-historical approach to re-mediation, pp. 69-74.</td>
<td><strong>Response to Reading 8:</strong> We have talked extensively, this semester, about the concept of mediation. Drawing on your understandings of this theoretical construct, how do you understand Cole &amp; Griffin's concept of re-mediation? How does this compare with your understandings of remedial instruction?</td>
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<tr>
<td>8w</td>
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<tr>
<td>9m</td>
<td>n/a</td>
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<tr>
<td>9w</td>
<td>Rosebery et al. (2010). “The coat traps all your body heat”: Heterogeneity as fundamental to learning.</td>
<td><strong>Response to Reading 9:</strong> The authors argue that heterogeneity is fundamental to learning, and that expanding what counts as &quot;appropriate discourse&quot; in elementary classrooms can make this resource more available in learning spaces. In what ways might the availability of different discourses create Zones of Proximal Development? In what ways is El Pueblo organized to privilege heterogeneity? In what ways can you re-mediate in your ensemble to make heterogeneity a more available resource for the purpose of creating Zo-Ped's?</td>
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<tr>
<td>10m</td>
<td>Gutierrez, K. &amp; Vossoughi, S. (2010). “Lifting off the ground to return anew”: documenting and designing for equity and transformation through social design experiments</td>
<td><strong>Response to Reading 10:</strong> Gutierrez &amp; Vossoughi (2009) write, “When we become conscious of the theory-driven nature of practice, we may become more deliberate in our use of theory as a tool for organization, decision making, and reflection.” (p. 104) Discuss how this article does (or does not) contribute to your understandings of how the kinds of theory-practice connections you are making through cognitive ethnographies may inform your approaches</td>
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to working with children at El Pueblo or in other contexts of learning, such as the classrooms where many of you will be teachers.

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<th>Week</th>
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<tbody>
<tr>
<td>10w</td>
<td>n/a</td>
<td>Problem statement workshop</td>
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<tr>
<td>11mw</td>
<td>Spring Break</td>
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