EXPERIENTIAL LEARNING EVENTS: A NARRATIVE EXPLORATION

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ABSTRACT

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This inquiry reconstructs three Experiential Learning Events (ELE) as case studies through the use of questionnaires, semi-structured interviews, and narrative. The ELEs in the study included a total of 70 students and teachers in unique cultural formations. The sites of study included: the 2001 Intensive English Seminar (IES): Fiction to Film High School English Class, the 2014 NASA + Real World Matters Climate Change in the Classroom Workshop in New York City, and the 2016 Glenbard District 87 Mathematical Curiosity Adventure in Ann Arbor, Michigan. Each ELE allowed students and teachers to interact with a field (literature/film, science, and mathematics) “in the wild.” Narratives were analyzed using metaphor theory and Gendlin’s EXP scale to understand learners’ perceptions of ELEs in relation to our understandings of traditional schooling. The primary research questions included: What happens during and after experiential learning events? Specifically, What did people perceive? How did it happen? For whom? Why?

Findings: While this inquiry was not designed to present any definitive answers, case studies and the metaphors related to them suggest ELE participants have richer experiences than they might in traditional settings. Narratives also suggest that a hallmark of ELEs is that they are more fluid in relation to the commonly fixed learning experiences found in traditional secondary school settings.
Held in a tunnel of my own vision that linked the clifftop to the sea, hundreds of feet below, I was curious now, and concentrating. I could feel the moment unfold. It was surely growing taller, this dark line. It was acquiring presence. Then two of the nearby birds began to flap their wings … something was happening … under the water’s surface. The birds lumbered into the air, and at that moment the black line turned into profile, and I realized what it was. (Kathleen James, *Sightlines*, 2013, p. 80)
DEDICATION

This work is dedicated to
Nicole & Téa for supporting me with love and care through this process.
My mom and dad (Roger & Pam) for making everything possible
&
John and Ruth for always pushing the boundaries of thought and experience.
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Chapter I
INTRODUCTION

A Roundup

My wife and I sat like giants in the plastic chairs in the elementary school designed for little people. It was our daughter Téa’s first day of Kindergarten—known in our district as the “Kindergarten Roundup.” It is worth noting that the Merriam Webster Online Dictionary defines “roundup” as:

a: the act or process of collecting animals (as cattle) by riding around them and driving them in
b: a gathering in of scattered persons or things <a roundup of all suspects>

Our daughter—neither cattle nor criminal, as far as we know—was in her classroom with her soft-spoken teacher and peers. Meanwhile, us Kinderparents were in the school library listening to the gentle male principal introducing us to the school. He was flanked by a group of all-female parent teacher organization (PTO) lieutenants sharing highlights about the school and its culture.

The presentation was upbeat. They talked about the school rules, embodied in the “very cool” school creed (echoed by the Character Counts™ program purchased by the district). Most of the rules, regulations, and recitations that students memorized were typical—they revolved around obeying authority and being silent. With a combined 35 years of teaching experience between my wife and myself, we realize the practical reasons for rules, e.g., listening carefully, periods of quiet, and the joys of silent reading. But the way with which a PTO mom said, “Wait until you see them walk quietly into the
library and in the hallways!” came off as an enthusiastic, “Yeeehaw!” followed by a whip crack as per the theme song from the 1960s television show *Rawhide*.

As if on cue—a disoriented herd of primary kids ambled into the library, were corralled into computer cubicles, slid their headphones on, and began grazing on their instruction for the class period.

We were apprehensive about sending our daughter to the neighborhood school for two main reasons: (1) the time my wife and I spent working in public schools, and (2) because Téa had attended a play-based cooperative pre-school.

Our daughter’s pre-school building was an historic red-brick schoolhouse built (mostly) in the 19th century and nested in a sizable forest preserve. The school’s backyard playground is surrounded by massive oaks and assorted greenery. The towering woods spoke to the children’s unlimited potential as they played in their shade. Paint, mud, bugs, and play that sprung from the brilliant and bizarre minds of three- to five-year-olds were seeds for the “core curricula.” Exploring the intricacies of democratic inter- and intra-personal relations with peers and grown-ups was the “skill for success.” The school’s organization as a coop made tuition reasonable. Parents collaborated to maintain the building, the grounds, and the finances. At least one parent was also required to be an assistant teacher at least once a month.

Like most parents, we suffer from the scientific phenomenon known as the Lake Wobegon Effect (Maxwell & Lopus, 1994); we think—at least when it comes to verbal skills and imagination—our child (like all the other parents in our own imaginary Lake Wobegon) is above average.

Téa’s teachers shared her development through photos, narratives, and dictations of her thoughts. If we were to lean on some quantitative metric, we would report that Téa probably averaged between 100-150 drawings, crafts, and paintings a week inside and outside of school. Most of her creations were attached to elaborate stories or had some symbolic purpose as a gift for someone. We can’t recall a time we saw her, or any of her
peers, disengaged at school. Of course, the preschoolers had all kinds of peer conflicts around sharing, game rules, and who could play with whom. Conflicts were generally student-generated and became a focus of teaching and learning. Peter Gray’s (2013) research highlights remind us that this type of play-based learning had always been the norm for our hunter-gatherer ancestors.

We searched high and low for a private elementary school that would capture the spirit of Téa’s early childhood experience. Every school we visited was funky (in good ways), but none of them were as flexibly structured or interest-based as her pre-school. Furthermore, most schools came with exorbitant price tags. After considerable discussion, we decided the half-day public kindergarten would connect Téa with children in our neighborhood, make sure she had “the basics,” and allow us some flexibility for her afternoons. Our working assumption was that little harm can come from two-and-half hours in a “data-driven” traditional public school.

During Téa’s first week of kindergarten, the most interesting part of instruction for her was “the smiley box” posted on the dry erase board at the front of the classroom. Every day—if you behaved well—the smiley with your name would remain in the box (a frame) on the board. The boy in the assigned seat next to Téa was consistently losing his smiley. This became THE BIG discussion at family dinner during the first week of school.

Some kids—for many possible reasons (Gnaulati, 2013; Gray, 2013; Hanscom, 2014; Mate, 2000)—might not be able to stay in their seats, follow directions, or tune out the happenings of the student sitting next to them. As educator parents, we would not immediately assume this as cause for concern or public shaming. Anne Haas Dyson (2002) — in her studies of primary classrooms—notes that “rigid curricular norms [contribute] to the transformation of … differences [between students] into classroom problems, since they [ignore] the particular possibilities of one’s children and their
communities” (p. 10). Here we were immediately seeing how difference became a very public deficit.

When my wife and I discussed “the smiley incident,” she viewed the problem as a site of possibility: “[That boy] might just need a good friend to listen to him.” Biting my tongue, I said, “You shouldn’t worry about the smileys. Focus on what you can learn from people in your classroom.” I wanted to tell her the smileys were—in kiddie parlance—“baloney sausage.”

One night the following week, my wife and I were working through some frustrating logistic challenges. Téa didn’t like our tone. From an adjacent room she yelled, “Mom … dad … are you fighting?”

I replied, “We’re not fighting; we’re just having a hard time figuring some things out for next week.”

Téa bellowed, “It sounds like you’re fighting!”

My wife attempted reason: “Just because we’re a little loud does not mean we’re fighting; we’re just tired and working out our schedules for the week.”

Téa was definitive: “I want you to stop fighting!”

Like sitcom parents we yelled, in unison, “We’re not fighting!” thus creating a “meta-fight” with our daughter.

Téa went silent, likely returning to some craft project. We continued our energetic debate. Minutes later we were nearing some resolution when our almost-six-year-old rocketed into our bedroom, affixed a purple piece of paper slapdash on the wall with three yellow circles—smileys—taped on it. “If you don’t stop talking this way, I’m going to take away your smileys.” Waves of laughter surged above a riptide of concern.
**Framing School**

In isolation, extending the roundup metaphor in the opening narrative might be viewed as rhetorical embellishment elevating the common toward the comical. Further reflection and connection suggest this might be unwise. Many researchers, most famously Lakoff and Johnson (2003), remind us that “our [metaphoric] concepts structure what we perceive, how we get around in the world, and how we relate to other people. Our framing system thus plays a central role in defining our everyday realities” (p. 3). Of course, metaphors only partly structure our actions, but they do give us evidence for “what a system is like” (p. 3) for those living inside it.

The manifestations of metaphors in cultures create a specific picture of what the school system is like. While each conceptual frame has a slightly different shade of meaning, dominant metaphors for school prioritize competition over collaboration, focusing on control and obedience as keys to academic success. One of Chomsky and Barsamian’s (1996) descriptions of education captures the subtext of many dominant metaphors:

> From childhood, a lot of [the educational system] is designed to prevent people from being independent and creative. If you’re independent-minded in school, you’re probably going to get into trouble very early on. That’s not the trait that’s being preferred or cultivated. (p. 27)

Here, at least as it relates to Téa, Chomsky and Barsamian could have been describing my daughter’s first month of public school. During the year, it became clear that one of the biggest goals was to make sure students follow rules in general and when studying some prescribed content. Generally, students are taught to move at the same pace, with little flexibility in behavior or thinking. Common metaphors for schooling and findings from the inquiry around school metaphors will be elaborated on in Chapter V.
Expanding School Experiences

In September, the students spent two weeks tackling this kindergarten standard in the common core state standard CCSS.MATH.CONTENT.K.G.A.1 around geometric thinking. It states students will be able to “Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to” (National Governors Association Center for Best Practices & Council of Chief State School Officers [NGA], 2010). Going forward, I will call this standard “geometric prepositions” or just “prepositions.”

Every night worksheets came home drilling our daughter on these concepts. In tandem with this math instruction, students were reading (and re-reading) a picture book about ponds in the Pearson© reading curriculum. During these units, about a month into school, Téa’s first smiley was taken away.

On the walk home from school Téa was crying about the loss of her smiley. I asked her what happened. She explained, “I was given three warnings for talking to my neighbor. When you have three warnings, you lose your smiley.”

I followed up, “What were you talking about?”

“I don’t know—just stuff.”

“What kind of stuff?”

“I was bored. All we do is over, under, in between, and below. The same stuff over and over again.”

“Can you tell me what you were talking about?”

“We were reading about ponds and frogs. I was talking to Marisa about the app on the iPad [we have at home] that says “mmmmmm sushi” when the frog eats a fish. I was also telling her about the difference between frogs and toads.”

From a literacy point of view, Téa’s seemingly off-topic discussion was actually a young learner making intertextual connections. This made a response easy: “That is great
that you were connecting your reading to some of the things we’ve done at home. You should keep making connections to things we read, see and do with what you learn about in class.”

“Really?” Téa was surprised this was a good thing.

“Of course, but let’s think harder about why the teacher didn’t want you to talk. Any guesses?”

“I dunno.”

“Can you think a little harder?”

She sighed, “Maybe because my talking was making it harder for other students to listen?”

“That’s probably true. Some students may have needed more quiet time to concentrate. Not everyone learns at the same speed.”

Téa replied through tears, “But there’s no place even to be creative! I want to draw and I’m not allowed to!”

I followed up, “What do you mean? You always have paper, crayons, and markers at your desk.”

“We can only draw when they give us drawing time. There’s an easel in the room and we’re probably not even allowed to use it.”

“What do you mean you’re not allowed to use it?”

“We can only use slates and markers and Kleenexes. Only teachers can use the easel.”

My wife and I guessed multiple factors were creating oppressive feelings about her learning experience. First and foremost, Téa was accustomed to school where a majority of her inquiry was built around individual and group free play and discussion. At her preschool, there were weekly themes that the whole class would explore. Like most schools, some themes were seasonal or teacher-directed, but unlike many schools, they were also generated through dialogue with students. A wide range of stations would be
set up for students to explore related to a daily theme. One need not do every station, but students were always working on sharing. These stations always included options for artistic expression.

Second, the public school does not usually have assistant or volunteer teachers. Because kindergarten students cannot easily read directions, it is harder for a single teacher to allow students additional autonomy to explore more academic concepts in small groups. Third, there is tremendous pressure to cover content, a majority of which must be tracked through expensive digital curriculum designed to monitor progress (and often to compare teachers).

Lastly, Téa’s class is the only half-day kindergarten in a large district where ten other elementary schools are full-day. While we wanted a half-day for our daughter, we did not consider the intensity that would create for her teacher to be competitive around learning outcomes in relation to full-day classes. “Extras” like art, music, and consistent play time are part of the full-day curriculum but not prioritized in the half-day because the teacher is focused on chasing the larger volume of reading, writing, and arithmetic covered by their full-day peers.

Despite these powerful tensions, one is left to contemplate if students need restrictive, lock-step whole class instruction built around single answers to learn official curriculum. Using the geometric preposition lessons as a case study, it is possible to imagine students exploring the concepts in a variety of different ways. Students could choose or be given objects and be allowed to arrange them in different ways to demonstrate their knowledge of the prepositions. Different artistic mediums could be given to students—Legos, paint, crayons, playdough. These tools could allow students to be given a choice of how to express their understandings of prepositions and geometry. From there, other possibilities arise. Teachers might walk around the class helping students move on to a preposition they may not fully understand. Students might share their individual interpretations of the concepts with peers. Given the accessibility of
digital technology, students might even take pictures of their interpretations and share them on one of the many private sharing apps designed for schools.

Students might leave the classroom and visit the school playground to explore the ideas. The teacher could call out instructions with multiple possible answers: “Go behind an object” or “Number ones find a way to get in between two people or things” or “number twos get next to a playground object.” If the teacher could get permission to talk freely inside school, they could go on a scavenger hunt to find things inside or outside the building that are over, under, and in between, etc. Better yet, the school is within walking distance from a pond; the students could work with parent volunteers to integrate their pond readings with their preposition knowledge finding things above, below, and between at the pond. Each of these ideas allows students to select their own prepositions and come up with the best way to teach or show their learning to the class. All these scenarios allow for whole class instruction while giving students freedom on how they express their discoveries and understandings.

In defense of the teacher (and the system she is working inside of), she likely feels pressure to adhere to rigid instructional practices because of district and state mandates. These mandates become power structures (and maybe beget metaphors) designed to focus and limit ways of doing and being in the classroom. Increasingly, student performance is managed through digital curricula and complex data collection systems with dashboards designed for progress monitoring. Each of the more (mildly) experiential teaching scenarios presented would likely take more time to plan, assess, and document than the type of questions found on a worksheet or pre-made iPad assessment. This does not mean standard assessments are not useful, but they certainly limit a student’s possibilities for how they engage with ideas or exhibit their knowledge.

If an educator does not cover all the skills, content, or standards or covers a topic that is non-traditional, perhaps in a more time-intensive way, there is a fear that students’ test performance may drop. Unfortunately, these standards can create teachers that focus
on a curriculum as something that must supersede the needs, interests, or abilities of individual students or groups of students. As stated by John Dewey (1902) over 100 years ago, “It is still just so much geography and arithmetic and grammar study; not so much potentiality of child-experience with regard to language, earth, and numbered and measured reality” (p. 30).

As far as my wife and I could tell (as this content was discussed on parent-teacher night). learning the prepositions was an important foundational skill because prepositions are part of the national standards. They don’t learn them because it is good for a student to know if they are stuck under a boulder, in over their heads, or stuck in between a rock and a hard place! The “relative position of objects” (NGA, 2010) is presented as something students and teachers should memorize and assess. These prepositions are presented in the same type of vacuum in which geometry proofs or the quadratic equation are usually taught in high school. Dewey (1902) described this type of instruction aptly: “A lack of any organic connection with what the child has already seen and felt and loved makes the material [of curriculum] purely formal and symbolic” (p. 24).

A Wide-Angle View

Researchers working in positivist traditions, like Stanford Math Education Professor Jo Boaler and Organisation for Economic Cooperation and Development (OECD) analyst Pablo Zoido (2016), echo Dewey’s more liberal concerns when summarizing their research on the PISA tests:

The U.S. actually had more memorizers than South Korea, long thought to be the paradigm of rote learning. Why? Because American schools routinely present mathematics procedurally, as sets of steps to memorize and apply. Many teachers, faced with long lists of content to cover to satisfy state and federal requirements, worry that students do not have enough time to explore math topics in depth. Others simply teach as they were taught. And few have the opportunity to stay current with what research shows about how kids learn math best: as an open, conceptual, inquiry-based subject.
Math and many other subjects are not presented in “open, conceptual, and inquiry-based” ways in many classrooms. Worksheets reinforcing skills at the elementary and high school levels are often presented in ways where obedience, task-completion, and self-reliance take priority over making learning meaningful, engaging, or even fun. None of these kindergartners were asked how they might use or interpret the content. In fact, early in the year, Téa complained that the teacher “wants us to behave like robots.” Here, our six-year-old was using metaphor to tell us what school felt like for her.

My daughter was not physically harmed by worksheets, but when her smiley was taken away, there certainly were psychological effects that led to tears and negative feelings about school. We have suggested she raise her hand if she needs to add something to the class discussion. Without our coaching, she started questioning the teacher on her judgments about who gets smileys taken away and even shared her feeling that there is not enough creativity in school. These are snapshots of an ongoing family dialogue about how to help our 6-year-old find ways to make school (in her words) less boring. If she continues to feel locked into school and her behaviors that deviate from the norm become a habit, she could be removed to the principal’s office, we could be called in for parent conferences, or she could be sent to another, “alternative” school in the district. These are not likely outcomes for our family, but these things certainly happen to many students who are different, especially students of color.¹

On the other side of the equation, teachers may fear giving students certain freedoms or utilizing more experiential pedagogies because test scores might drop. If teacher evaluators were to see more experiential teaching practices (defined at length in Chapter V) in place, they could be perceived as an ineffective use of instructional time.

¹See studies about students of color (Kirkland, 2013; Morris, 2016). Also, for a truly bizarre case study where a boy with behavioral problems is literally put in a large cardboard box (and thus metaphor becomes reality), see Ruth Vinz’s story of the “boy in the box” (Chapter 4 in Schaalfsma & Vinz, 2011).
With the weakening of tenure laws across the United States, either of these outcomes could put an educator’s job and livelihood in jeopardy.

A few weeks later, when we asked Téa what the difference was between her pre-school teachers and her kindergarten teachers, she said, “My pre-school teachers understood my jokes.” This seemed telling to me and my wife. Her pre-school’s philosophy was built around celebrating difference and community—there was a focus on interpretive labor, dialogic, and communicative relationships with students’ unique relationship among the self, peers, the teacher, and content. Our personal observation was that more time was spent by teachers listening to students (even their jokes) rather than telling them what to do. On the other hand, Téa’s elementary school had a philosophy built around standardized content and behaviors.

One week Téa had a conflict about sharing a toy with another student during free play time. According to our daughter, there was no time or space to talk through the conflict with an adult (and she may not have been willing to if there was). This leads to the flipside of getting in trouble—tuning out. She explained that she ended up just going back to her assigned seat and sitting out play time in the same way she stalled on the boring worksheets. These are different forms of disengagement.

*Fast Company* magazine ran a profile on the brilliant (and notably happy) pop musician Pharrell Williams:

Growing up, Williams had no interest in how the world was presented to him, as hard rules or lines. As long as he can remember, he’s wanted to blur them. The few times he had a boss, including a stint at McDonald’s when he was a teenager, “I got fired-every time. I had good managers, I was just lazy.” It wasn’t laziness so much as boredom, and his fuel is enthusiasm. Williams describes himself as a visual person, a kind of intelligence that isn’t celebrated in most schools. “The school system isn’t spending a lot of time looking for specific potential. We are bred to be worker bees; to grow up, get married, have a kid, drive a Volvo,² do our taxes, invest in

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² Full comedy disclosure, I’ve driven a Volvo for 17 years.
something, find a hobby…. I spent a lot of time in school not paying attention.” (Schilling, 2013)

How many Pharrells don’t find pathways to meaningful lives and careers because of the restrictive curricula and cultures of schools? We will never know for sure. We do know that politicians believe that our national Common Core Standards hold the answer. Their explicit intent is to develop “college and career readiness.” In this area, policymakers and educators across the planet project the same zeal and certainty around human behavior and cognition through these mandated data points as the military does around technology in theatres of war (Ripley, 2013).

The journalist Andrew Cockburn was on the Daily Show (Bodow & Stewart, 2015) discussing his book Kill Chain: The Rise of the High-Tech Assassins (2015). During this interview about the present American drone-aided warfare, he explained that during military campaigns

the dream that our political [and military] leaders get sold on and … sincerely believe in, or what they’re looking for is certainty. The idea is that its gonna be possible because of the wonders of computer processing and all the rest, that you can see everything, you can know everything and therefore you can sort of make it all predictable.

This positivist spirit animates many educational thought leaders, administrators, and teachers. Books like Data Wise: A Step-by-step Guide to Using Assessment Results to Improve Teaching and Learning (Boudett, City, & Murane, 2013) or Visible Learning for Teachers (Hattie, 2012) use standard achievement metrics and effect sizes as the sole data that are important to measure.

While popular assessment literacy articulations like Classroom Assessment for Student Learning: Doing It Right—Using It Well (Stiggins, Arter, Chappuis, & Chappuis, 2004) emphasize formative, low-stakes “assessments for learning” as opposed to “assessments of learning” that have the possibility to be more open and creative—this discourse of formative assessment becomes background noise to the larger discussion
about standardizing assessments around clear, uniform learning targets with clear measurement of the same outcomes for every student.

The Obama Department of Education was built on the testing legacy of No Child Left Behind (NCLB) through their Race to the Top initiative. In 2015, they made a dramatic pivot, suggesting that states curb their use of standardized tests (Klein, 2015). Even with that suggestion, schools, and now in many cases teachers, are judged on state tests, national assessments (NWEA, SAT, ACT), and—thanks to the steady march of the College Board into the big business of high school curriculum—AP scores. National and local assessments are the pillars of data-driven schooling and the educational industrial complex.

Of course, data can be, and often are, useful. When used mindlessly or obsessively, they support educational fantasies about instrumental, and deeply linear ways of teaching and learning. They also create a sense of what theorist Lauren Berlant (2011) calls “cruel optimism,” where one assumes fantasies of the good life can simply be realized by succeeding in existing systems. The larger questions about which data count and who decides what these data are often remain lost. Searching for other, more humanizing types of data is one way we might rethink what “the good life” can be, especially as it relates to the lifetime students spend in formal education.

By any measure of common sense, good test scores are hardly a guarantee of “career and college readiness.” We might look to broaden our ideas about what the experience of school should be like for students and teachers. John Dewey (1893) suggested, “If I were asked to name the most needed of all reforms in the spirit of education, I should say: ‘Cease conceiving of education as mere preparation for later life, and make it the full meaning of the present life’” (p. 660). The spirit of making the “present life” richer for students and teachers animates this inquiry.
Mandated skill and content responsibilities related to curricula—what Greene (1988) refers to as the “normative” work of schools (p. xi) —creates cultural formations in many schools that focus on instrumental ways of doing education. Students and teachers are rarely given sufficient time to explore and engage with people, ideas, content, and cultures that may expand the boundaries of traditional classrooms and learning, again what Greene would call “the possible.” The possible need not ignore content. It often decenters the disciplines as they are usually conceptualized. It moves toward uncovering fluid bodies of knowledge in multiple contexts.

This inquiry is designed to collect stories about a less instrumental type of learning exemplified by stories constructed from interviews about three Experiential Learning Events (ELEs). Stories have the power to reshape the ways we think about our lived experiences. Stories need not always be seen in this type of either/or dichotomy. Rich stories do not always “smooth over the tensions[s] erasing the possibility that there [are] different stories bumping up against each other” (Clandinin, Murphy, Huber, & Orr, 2010, p. 84). Narrative research can embrace these complexities and paradoxes, allowing a wide range of ideas, emotions, and possibilities to comingle.

This study of ELEs is designed to use stories in multiple ways to get a deeper understanding of the central questions of the inquiry: “What happens during and after experiential learning events?” Specifically, What did people perceive? How did it happen? For whom? Why? Two broad research traditions—teacher-inquiry and narrative inquiry—guide the study, combined with the metaphor theory explored in Chapter I, Gendlin’s EXP scale from Chapter III, and the continuum of pedagogical traditions from Chapter IV.

Two thinkers working in teacher-inquiry help frame the methodology of this study: Ruth Vinz and Janet Emig. Vinz’s (1996a; Schaafsma & Vinz, 2011) work highlights the
importance of teachers’ conceptualizations and understandings of their work. She illustrates the many ways teacher reflectivity challenges educators to \textit{re-see, rethink, and reevaluate} their work. Vinz’s (1996a) framework invites educators to reflect on their practices “by making problematic the situation under investigation [to] help teachers identify what happened, analyze why it happened, and speculate on possible changes” (p. 84).

Vinz (1996a) also reminds researchers that reflections can “increase teachers’ insights about the nature of teaching, create dissonance that enables them to reevaluate purposes, and aid their understandings of the complex social forces underlying teaching practices” (p. 84). To explore the research questions, this project utilized teacher and narrative inquiry traditions to see “through the looking glass” as they relate to these ELEs being studied.

A third, important thinker is Robert Nash (2004) and his articulation of Scholarly Personal Narrative Writing (SPN) as a form of research. This type of writing puts “personal interpretation, perspective, translation, and construal … at the center of how the author ‘sees’ and understands the world” (Nash & Viray, 2013, p. 4). The narratives at the center of this study are constructed from participant interviews. The literature review gives a series of lenses from which they can be analyzed, interpreted, and interrogated. No singular truth emerges, but some ideas and patterns manifest that may be generative for further inquiry.

My present life is both in the role of an educator—I am working within, outside, and around public school systems—and a parent. I also have a background working in the film and music business. This experience in the culture industries has afforded me better understanding of the problematic and the possible as related to pop and common cultures in classrooms. Framing this story with a narrative about my daughter Téa allows and some of my background frames the inquiry with a “double-visioned” approach (Schaafsma & Vinz, 2011). My work and research are a parallel narrative in relation to
Téa’s journey in the early years of public school. These stories will help us explore school as it often is and school as it might be.
Chapter II

K-12 SCHOOLING—AN EXPERIENCE HAD BY ALL?

The paradox of education is precisely this—that as one begins to become conscious one begins to examine the society in which he is being educated. The purpose of education, finally, is to create in a person the ability to look at the world for himself, to make his own decisions … to ask questions of the universe, and then to learn to live with those questions, is the way he achieves his own identity. But no society is really anxious to have that kind of person around. What societies really, ideally, want is a citizenry which will simply obey the rules of society. (James Baldwin in “A Talk to Teachers,” 1998, p. 678)

Educational Marketplaces

Baldwin’s (1998) audience in that passage is educators. This part of his talk assumes a student’s point of view. He suggests that each student must “examine the society in which he [or she] is being educated.” He also reminds us that “the whole process of education occurs within a social framework and is designed to perpetuate the aims of society” (p. 678). Shifting to the educators’ vantage point, Baldwin calls for educators to think critically about the type of society schools value. Each teacher and student must consider the world they are creating and for whom these worlds are being created.

Founding father Thomas Jefferson laid a foundation for broadening educational access in the “virtuous” service of common good. He hoped students of merit could replace or augment the aristocratic elite. Some of Jefferson’s vision was achieved. Educational opportunity did expand—for White men—during the 19th century. Then, as
now, this was done not to develop “virtuous” citizens concerned with the common good but to develop the national workforce (Greene, 1965/2007; Taylor, 2016).

Moving from Jefferson to Baldwin into the present day, this logic of market forces remains pervasive in K-12 education (Abrams, 2016). Narrow measures of learning emphasize “the constant production of evidence that one is ‘doing the right thing’” (Apple, 2014, p. xx) to make sure students are workforce ready. Schooling continues to focus on creating students who will productively contribute to the national economy.

Of course, it is noble and important that people be gainfully employed as a result of their education. Unfortunately, employment alone does not mean that a person’s life has meaning or purpose. Employment does not always mean a person is able to contribute to the common good or participate in the cultures that matter to them.

Today, educators work in neoliberal educational contexts organized around the “technologies and ideologies of audit cultures” (Apple, 2014, p. xx). Schools are almost exclusively evaluated by their test scores domestically (and even internationally). Testing metrics narrow curriculum to skills deemed essential instead of those deemed “soft.” Administrators often police this curriculum through progress-monitoring practices. Data are pulled regularly around test-related skills so that teachers can adjust their practice and re-teach critical skills to improve the students’ and school’s performance on state and national assessments.

As just one example, many districts I have worked in (including the New York City Public Schools and Chicago Public Schools) focus extensively on argumentative writing because of its prominence in the Common Core State Standards and its related assessments. All writing becomes a form of argument to the exclusion of other more open genres perceived as less important. What is worth teaching and learning is narrowed to things that will improve test scores.

If a school is not succeeding, as measured by accountability metrics, free market logic enters into the discourse. At the policy and administrative level, different ways to
think about how we teach and what is worth teaching are rarely part of the discourse. Competition and choice are presented as the most viable solutions. Merit pay or evaluation of teachers based on test scores or the creation of new private or semi-private school markets is perceived as the most logical way to improve schooling.

This free market frame extends to the business, banking, and economic models of schooling, the Common Core State Standards explicitly articulate that their goals are for students to be “career and college ready.” This conceptualization of schooling helps produce a society and its related cultural formations with a focus on instrumental leaning and training, not cultures of inquiry, learning, or meaning making.

Student Achievement and Attainment

For the sake of argument, let’s take the prevailing logic of educational reform at face value. Let us assume the billions of dollars invested in education by schools, reformers, and state and federal governments are designed to “do the right thing” for students. Initiatives like AP programs, national testing systems, and Common Core State Standards are useful allocations of finite resources toward improving teaching, learning, and achievement.

The following data certainly suggest a “worst-case scenario” portrait of the American school system. The academic, affective, and political picture constructed below constitutes a sizable but incomplete data set. While looking squarely at schools and those living in them, it should not be assumed that schools cause all these realities. Education is complex, and there are a multitude of historic, socio-economic, and cultural factors that impact schools and schooling. There are many stories we might be able to tell about

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1While many large urban areas have been ground-zero for market thinking around charter schools, the state of Michigan led this charge nationally. In 2017, The New York Times Magazine ran long exposé, “Michigan Gambled on Charter Schools. Its Children Lost” (Binelli, 2017). As measured by traditional metrics, charters have been far from an educational panacea.
school; what follows is one way to represent what American schools might be like for students, teachers, administrators, and parents (MacLure & Stronach, 1993).

First, a look at achievement as articulated by normative metrics in the system:

- A 2016 study from the National Assessment of Educational Progress (NAEP) showed lower scores in reading and math with a relative trend toward stagnation since the early 1990s (Zernike, 2016).

- Racial achievements remain relatively unchanged since the 1970s (Camera, 2016; Hanushek, 2016). There are caveats to these findings but the general trend is achievement stagnation with little improvement despite government’s best efforts (Ravitch, 2016).

- Inequities may also extend to those in lower socioeconomic groups. A recent study measured student-level indicators about their opportunities to learn (OTL), and academic performance from the 33 countries participating in the 2012 Programme for International Student Assessment (PISA) found that schooling generally exacerbates income inequality. They also found this relationship to be stronger in English-speaking countries (Schmidt, Burroughs, Zoido, & Houang, 2015).

- Continuing with an international lens, the United States performance on PISA tests is below average in math. US reading performance has stagnated since PISA’s inception—even if you disaggregate the data to look at a high-performing state like Massachusetts (Barshay, 2016; Hanushek, 2014; OECD, 2103). Organizations like the National Education Association (NEA) note:

  The fact that the United States hasn’t mustered any better than a barely average ranking has always triggered alarm among many policymakers, who see the performance as irrefutable proof that our schools are failing to prepare students for the 21st century. Exaggerating the significance of the PISA results unfortunately feeds the agenda of proponents of market-based “reforms.” (Walker, 2013)
• The percentage of students enrolling in college has been declining for four years (National Student Clearinghouse Research Center, 2016) and the gap in post-secondary attainment between whites and African American, Latino, and students from low-income families persists (Balfanz, DePaoli, Ingram, Bridgeland, & Hornig-Fox, 2016) and the gap widened between higher- and lower-income students (OECD, 2014).

• Multiple independent studies (not sponsored by the College Board) suggest that AP participation—a major tool used for ranking high school “excellence”—is not a strong indicator of college preparedness or achievement (Challenge Success, 2013; Klopfenstein & Thomas; 2005, Sadler, Sonnert, Tai, & Klopfenstein, 2010; Warne, Larsen, Anderson, & Odasso, 2015).

Many factors outside of school, e.g., increased percentage of young people living in poverty, the increasing cost of a college education, or our hyper-connected media environment, could impact these findings. That said, a collage of existing measures of academic and intellectual achievement appears lackluster. If the system and its present reforms are designed to improve these metrics, one would be hard pressed to consider either the reforms or their outcomes progress.

**Student Affect and Well-Being**

Moving beyond performance metrics, we can look at another incomplete, but suggestive collection of evidence related to students’ affect and well-being.

• A 2003 study by psychologists Mihaly Csikszentmihalyi and Jeremy Hunter researched student happiness and unhappiness in a group of 800 6th-12th grade public school students. They found, “whenever students are involved with school-related activities, their happiness level is below average” (p. 187).
A 2015 study of approximately 22,000 high school students by the Yale Center for Emotional Intelligence found that most students described school with negative descriptors. Seventy percent of students reported they are “bored,” and 80% are “stressed” during school (Born this Way Foundation, 2016; Brackett & Germanotta, 2015).

Additional exploration of the effects of schooling were uncovered by Kristen Olson’s (2009) research in her book *Wounded by School*. Her qualitative study focused on interviewing adults about their experience in schools. She uncovered a series of common school “wounds,” including painful memories of being shamed in school, low appetite for intellectual risk-taking, and “chronic, habitual anger toward teachers, and those in authority, due to past experiences of injustice, or of not being ‘seen’ in school” (p. 19).

A longitudinal study comparing students in the 1980s with those in the 2010s (with almost 7 million participants) looked for depressive symptoms over time. In their sample, high school students in the 2010s (vs. the 1980s) reported significantly more challenges with sleeping and thinking (subtle indicators of depression) and were twice as likely to have seen a mental health professional (Twenge, 2015).

A related study of administrative data from 2008 to 2015 at 32 children’s hospitals across the U.S. found that hospital admissions for children ages 5-17 with suicidal thoughts or actions doubled over seven years (American Association of Pediatrics, 2017).

These studies were not designed to pinpoint the causes of depressive and or suicidal symptoms. Given the snapshots collected here and the amount of time students spend in school, it would be reasonable to imagine that schools and schooling would have some relationship to the mental states of some percentage of school-age children. It is also equally true that for some students, kind teachers and positive school environments may be their lifeline and a source of
• According to the Centers for Disease Control and Prevention (2017), there was a sharp drop in teen suicide rates between 1995 and 2005, but since then there has been a steady uptick in this metric since 2011.

• In 2017, the *New York Times Magazine* ran a feature by Denizet-Lewis on the concerning increase of American teenagers suffering from severe anxiety. The article cited the American College Health Association’s annual survey of students, which showed that 62% of undergraduates (n=27,787) in 2016 were facing “overwhelming anxiety,” up from 50% in 2011 (n=23,518). It also cited a longitudinal study that UCLA’s Higher Education Research Institute (Eagan et al., 2016) started in 1985 that asked students if they “felt overwhelmed by all I had to do” during the previous school year. Their most recent study surveyed 137,456 first-time full-time students who entered 184 U.S. colleges or universities. In 2016 41% of students felt overwhelmed, in 2010 the percentage was 29%, and in 1985 only 18% of students felt overwhelmed.

• On a less empirical note, the song “Stressed Out” by 21 Pilots was a hit song in 2016. While the top 40 is not necessarily proxy for secondary-aged youth, *The Atlantic* made the case that this is “an Anthem of Millennial Anxiety” (Friedersdorf & Garber, 2016). A hit pop song about stress resonating with the 15-29-year-old age group is curious. There are certainly many reasons one might be stressed out in relation to national and global trends, but notably this demographic has also been subject to the intense testing regimes of NCLB and ESSA. It is possible that the “cruel optimism” (Berlant, 2011) that schools are making students “career and college ready” has not quite delivered on their promise. One verse rapped during the song:

mental well-being. The point of sharing these two snapshots is to note the increase in these mental health issues and to highlight that “something is rotten in the state of Denmark.”
We used to play pretend, give each other different names
We would build a rocket ship and then we’d fly it far away
Used to dream of outer space but now they’re laughing at our face
Saying wake up you need to make money. (Tyler, 2015)

The need to make money is often part of the pervasive market logic of schooling, especially during the last two decades, and the organization of our society as a whole.

**Schools—Teachers, Parents, and Politicians**

Moving beyond measures of academic achievement and student well-being, what do we know about those who work in, with, and for schools (teachers, parents, and even politicians)? Again, here is another suggestive collection of snapshots.

- Forty to fifty percent of teachers leave within their first five years of teaching due to a variety of unfavorable working conditions (Ingersoll, 2012; Riggs, 2013). This, coupled with the retirement of baby boomer educators, is creating a national teacher shortage (Sutcher, Darling-Hammond, & Carver-Thomas, 2016; Will, 2016).

- K-12 teachers are the least likely among 12 occupational groups in their study to feel like their opinions count at work. While this same survey had teachers saying they experienced many positive interactions during their day, like laughter and smiling, the survey found that 46% of K-12 teachers report high daily stress from their jobs—tied for the highest stress levels in all groups surveyed (Gallup, 2014).
Major test cheating scandals have surfaced in a variety of school districts (Aviv, 2014; Kempf, 2016; Turner, 2011). The most famous case ended with prison terms for teachers and administrators in the Atlanta public school system.

Affluent White, college-educated parents, teachers, and concerned citizens continue to join the growing “opt out of testing” movement (Pizmony-Levy & Saraisky, 2016). In some school districts—like the Seattle Public Schools—teacher protests ended the use of the Measures of Academic Progress (MAP) test for their high school students (Micucci, 2013).

In a rare show of resistance to federal mandates, many states have dropped out of the Smarter Balanced and PARCC Common Core Testing Consortiums.
These national measures are usually replaced with similar state assessments (Brown, 2015; Gewertz, 2016, 2017).

- Many politicians who support market-based reforms and accountability systems send their children to private schools. While no study examines the exact number or percentage of politicians’ children that are enrolled in private schools, President Barack Obama and President Trump, Chicago Mayor Rahm Emanuel and Secretaries of Education Arne Duncan, John King, and Betsy DeVos all have or had their children enrolled in private schools during their time in office (Goyal, 2016).

These snapshots suggest many challenges on the part of teachers, parents, politicians, and students to work within the public school system broadly conceived at the national level.

On one hand, these vignettes of the school systems’ existing measures of performance, their relationship with larger school communities, and the emotional impact on students and those involved in the school systems are cause for reflection. On the other hand, my time working in schools may have led me to identify these snapshots reflecting on my experiences in schools and those of my daughter. Either way, this collection of data is good reason for educators and policymakers to question if they are “doing the right thing” by working within the existing assumptions that shape the American educational system.

**From Achievement Toward Affect**

If one is concerned about the quality of learning experiences, it might not be best to double down on competitive assessment policies (as the Race to the Top legislation did). Educators might consider putting our collective energies into creating school experiences that have more relevance to the needs of learners, teachers, and families.
During the Enlightenment, Immanuel Kant (2015) proposed in his *Critique of Practical Reason* that human interest, or desire (*Begierde* in German), is essential to “practical cognition” because “reason, in the practical, has to do with the subject, namely with his [or her] faculty of desire” (p. 18). Kant’s philosophical concerns about affect and desire in relation to one’s ability to reason have been shown as essential to learning by many researchers. Literature suggests that a focus on student well-being and happiness (a field referred to as eudology) is essential to improve student learning.

It is well established that students who are stressed in negative ways struggle to learn (Armstrong, 2016; Jensen & Nutt, 2015) and students facing any type of scarcity (emotional, economic, or otherwise) will not easily be able to focus on learning (Mullainathan & Shafir, 2014).

These are compelling rationales to shift from focusing on “achievement” to more carefully consider both student affect and well-being as well as the possibility of better learning experiences for students. USC researcher Mary Helen Immordino-Yang (2015) offers the following comment on the educational implications of affective neuroscience:

> It is literally neurobiologically impossible to build memories, engage complex thoughts, or make meaningful decisions without emotion. And after all, this makes sense. The brain is highly metabolically expensive tissue, and evolution would not support wasting energy and oxygen thinking about things that don’t matter to us. Put succinctly, we only think about things we care about. This field of research suggests students who are not able to engage with and care about school (for whatever reason) will face additional barriers to learning. (p. 18)

Jihyun Lee’s (2014) research echoes Immordino-Yang’s thesis as it relates to traditional measures of student achievement. Lee examined the reading test scores and surveys of almost 70,000 students from 13 countries. Her study found striking similarities across all 13 countries in their “best” predictor of reading achievement—either enjoyment of reading or utilization of reading strategies to efficiently summarize the text. Enjoyment of reading in particular was a strong predictor [for success at reading] at both individual and country levels. This study concludes that what motivates human learning
is invariant across countries with vastly different educational, cultural, and language systems. (p. 365)

Of course, formal instruction in how to read is important, but enjoyment of reading may be an even larger factor. Here then, looking at more standard measures of achievement, schools that want students to perform better on tests or become better readers and life-long learners likely need to consider engagement and enjoyment.

Existing cultural formations do not take measures of student well-being, but focus on attendance rates and test score. How often do we hear schools, reformers, or departments of education talking explicitly about the importance of making learning and schools more enjoyable places for students? Questions of academic enjoyment, meaning-making, and overall student well-being fade into the background. It is possible—and maybe even probable—that intellectual achievement (broadly) and academic achievement (as it relates to formal schooling) are less likely to occur without careful consideration of student well-being and emotional factors in the learning environments created by educators and educational policy.

Possible School Experiences

While many positive, generative, and even transformative things happen in K-12 education for individuals, classes, and schools, this is not likely to be the case for many learners. In a limited sense, school can be said to “work” for many students, teachers, and parents. Many learners “play the game” of school, go on to post-secondary education, and establish economically stable lives. They may or may not cite their formal education as a beacon of their past or their future, and they may or may not continue to engage deeply with the world of ideas. By way of example, the author of the Captain Underpants series, Dav Pilkey, was asked in 2006 to speak to teachers at the International Reading Association convention. There he said, “I didn’t do very well in school and I didn’t like
very many of my teachers. I’m speaking to a whole group of teachers about how much I hated all my teachers!” (Pilky, 2010).

In my 20 years working in public schools, my observations suggest that the normative cultural formations of school teaching and learning do not often engage students in personal development or understandings of others. Memorization of content often supersedes placing content in the context of larger worlds. Issues of student or teacher expression, collaboration, interpretation, emancipation, consciousness raising, or intersubjective understandings are generally absent from dominant educational discourses. While individual students and teachers will always find ways to work around the system, schooling often talks about liberal commitments to equity, equality, freedom, and citizenship, but generally has a narrower, more neo-liberal focus on skill and content that are perceived as essential for “career and college readiness.” As Apple (2014) suggests, “‘thick’ meanings of democracy grounded in full collective participation are replaced by ‘thin’ understandings where democracy is reduced to choice on a market” (p. xxi). Test scores become a proxy for learning, and right answers become a substitute for better questions or processes.

Neoliberal policies often make schooling a tedious verb, something done to students and teachers. Prevalent “ways of doing school” are not comforting or compelling to many learners. An #edchat tweet by David Kirkland (2016) of New York University that echoes his 2013 research succinctly captures the reason we should consider “doing school” differently: “In this environment people don’t feel connected to [PK-12] education. They feel that it is something done to them and not with them. So they resist.”

3 As mentioned in the introduction of this chapter, vocational education has been a facet of American education dating back to Jefferson. Neo-liberal discourse is explicit about maximizing the return of investment (ROI) in schooling. This is best illustrated by the multitude of articles on “highest paying college majors” that can be found in a basic Google search. We learn to accumulate wealth first, while knowledge is a secondary concern.
Journalist William Doyle (2016) makes a strong generalization about American schools, specifically inner-city schools that need “‘no excuses,’ boot-camp drilling-and-discipline, relentless standardized test prep, Stakhanovian workloads and stress-and-fear-based rigor.” Reflecting on his daughter’s experience as an ex-pat in Finnish schools, Doyle questions these assumptions, asking, “What if the opposite is true?”

There is a significant body of literature that does indeed suggest the opposite may be true. A strong case has been made that more humane, inquiry-driven, and experience-based schools can be better learning environments for students. In Successful Failure, Varenne and McDermott (1998) point out that the institutional lens of school often constructs students as failures in systems with limited amounts of success to give. Through a series of case studies, they posit that success and failure are arbitrary categories determined by cultural formations. They state, “Failure is a dangerous category, easy to overuse institutionally and terribly unfair to young children who are increasingly subject to classification before their potentials are meaningfully explored” (p. xiv). The very measures we set about to delineate success and failure foreclose the many ways of teaching and learning where more students might find ways to succeed.

Longitudinal studies such as Lives of Promise (Arnold, 1995) problematize these ideas of educational success and failure further. Arnold has researched what becomes of high school valedictorians over a 14-year period. Her studies showed that school success does not always equate to life success. Some students who were deemed successful in the game of school struggled on the larger playing field of life for many reasons.

In addition, the famous 8-Year Study that took place between 1930 and 1942 studied high school students in progressive (driven by inquiry and experimentation) non-traditional high school programs where students were guaranteed admission to top

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4A name for exceedingly hard-working people in the former Soviet Union that made other workers look lazy by comparison.
colleges. Despite the lack of metrics in these programs, students from the most experimental high schools “substantially outperformed their peers in terms of academic averages and honors, intellectual traits and personal and social responsibility” (Kridel & Bullough, 2007, p. 7) in college. While this does not mean these students went on to have meaningful and successful lives, it does suggest that the ordinary constructions of success and failure attributed to more traditional secondary teaching and learning cultures can, in some circumstances, be jettisoned. If this were the case, many students would still be “college ready,” as conceptualized by traditional post-secondary metrics. Research, common sense, and lived experience remind us that existing curricula and how one performs on an assessment are not the only variables that impact one’s ability to succeed in college and beyond when looking at future life situations and satisfaction.

This inquiry began with a brief exploration of traditional metrics to measure student achievement and learning. The purpose of this was to suggest that if these are the primary goals and measures of schools and schooling, the present ways of “doing school” might not be very effective in relation to accepted and established goals. There is a body of research (some of which will be mentioned in the following chapter) that links more experiential learning to student achievement as measured by traditional (testing) metrics. Some of this research assumes that the purpose of school is primarily to increase standard measures of student achievement. Generally, this research does not constitute a deep rethinking of schools and schooling. That said, this type of research and practice (though it falls outside the focus of this inquiry) has value. Looking at the impact of teaching practices on existing, established measures can shift educators to focus on the possibility of more diverse, nuanced, and multifaceted ways to engage students in learning as well as other ways learning might be assessed.

If educators, school systems, and policymakers were to put more energy into the creation of learning experiences and environments that focus on enjoyment and engagement, possibilities emerge for rethinking how we do school. This inquiry will look
broadly into the general effects—if any—of three experiential learning events. To set up this work the following chapters will: (1) look at some established ways to define and think about experience, (2) review literature and traditions related to experiential learning, (3) present a working conceptualization of experiential learning and experiential learning events as related to the sites of study, and (4) present a methodology for the inquiry moving forward.
Chapter III

LITERATURE REVIEW

_While humankind collectively has increased its material powers a thousandfold, it has not advanced very far in terms of improving the context of experience._ (Mihaly Csikszentmihalyi, 1990/2008, p. 16)

**Theories of Experience**

Like the words “culture” and “consciousness,” “experience” is a broad term used widely in everyday speech. Fortunately, some educators, philosophers, and psychologists have articulated more nuanced conceptualizations and descriptors of experience that can be used in the context of teaching and learning.

Traditional learning experiences often have some degree of standardization and are usually designed for instrumental (not communicative or reflective) learning (Mezirow, 1991, p. xv). Students of any age can have “learning experiences” in the most lifeless, mundane, and rote worksheet-based classrooms. Technically, teachers using textbooks or pre-packaged curricula are creating, or at least following, a prescribed design for a “learning experience.” Even on this more linear and instrumental end of the spectrum, people can learn from this type of experience. It is also important not to assume that learning experiences are automatically positive. Where there are strong motivation and affect, there will likely be struggle and failure. Columbia biologist Stuart Firestein (2016) goes so far to suggest that the work of scientists is composed “mostly of ignorance and failure—with perhaps a dash of accident or serendipity thrown in” (p. 3).
Regardless of the approach one takes toward experiential learning (see Chapter IV), it is the term that is usually used to define open-ended pedagogies. This can make teaching and learning simultaneously more enjoyable and uncomfortable. As one of the people interviewed in the study suggested, experiential learning allows for the messiness of life to be part of instruction. Experiential Learning (EL) orientations are generally concerned with motivating and engaging students in more “hands-on” and inquiry-based ways of doing. Of course, there may be struggle and confusion, but it is ultimately a rich experience guided by a larger purpose.

Richard Sheridan (2013), the CEO of Menlo Innovations, participated in one of the experiential learning events (ELEs) in his study. His company develops software solutions “to delight the end user.” As is often the case with EL pedagogies, a pathos of curiosity and joy animates his work, but he reminds us:

Joy is deeper, more meaningful, and purposeful. Happiness is more a momentary state of being. You can be joyful without being happy every moment. Our team co-created one of the world’s leading cancer and AIDS research instruments and collaborated on building a comprehensive organ transplant information system. With these projects, our company did important, meaningful work that was years in the making. It would be hard to be happy the entire time. In fact, if happiness was a requirement for success, we would have stopped very early on when the going got too tough. The focus on a tangible, joyful outcome is what keeps us going. (p. 10)

Moving forward, it is important to keep this in mind. When talking about EL, one hopes it is a more joyful endeavor than traditional learning for more participants. That does not mean EL is rainbows and unicorns. These types of experiences are laden with cul-de-sacs, frustration, and even outright failure. On the other hand, EL may hold more possibility for joy because it usually casts a wider net on what experience may look like.

This chapter introduces other ways we might think about LEs. This inquiry’s sites of study are designed to shift away from the usual ways of thinking about schooling toward more active, novel, and engaging experiences for learners. This inquiry is designed to probe the types of learning experiences that move beyond the routine and
normative. To define what this means, it is helpful to explore some theory and research around the textures and shapes of experience.

John Dewey (1934/2005) suggests a non-linear and recursive conceptualization of experience. He sees it as “a product, one might almost say a by-project, of continuous and cumulative interaction of an organic self and the world” (p. 229). Dewey’s ideas about experience also suggest situationist theories of learning that focus on a wide range of interactions. As stated by Lave (1988):

> What we call cognition is in fact a complex social phenomenon…. The point is not so much that arrangements of knowledge in the head correspond in a complicated way to the social world outside the head, but that they are socially organized in such a fashion as to be indivisible. “Cognition” observed in everyday practice is distributed—stretched over, not divided among—mind, body, activity and culturally organized settings. (p. 1)

Dewey and Lave focus educators on interactive, iterative, and embodied ways to think about experience. From here one can move toward giving this broad concept dimensions, textures, and shapes.

A brief case study of the teaching of reading illuminates some of the research possibilities related to any given learning experience. We might be tempted to think of the experience of teaching and learning to read in terms of a binary (Muchmore, 2004). One can perceive the teaching or reading “as a collection of individual skills [or] a dynamic, interactive and purposeful act” (p. 40). The former “made reading a very tedious subject,” but the latter’s dynamism can move us beyond a binary, allowing us to think in multiple ways about learning experiences.

Knowing there is no single way of being, thinking, and doing in school, Muchmore’s (2004) description sets up a continuum. Dominant cultural formations of schooling align with the skills, knowledge, and information approach—what might also be referred to as an instrumental approach. Experiential learning hopes to be more communicative and socially constructed—open, dynamic, and fluid. We can explore a range of possibilities as it relates to students’ reading experiences. We can see if they
ever entered a state of flow while reading, if they used their reading to interact with others or to solve a problem during or after class. We could ask students and teachers about their purposes for reading. We could ask how reading relates to the lives and goals of students and teachers or if they felt powerful or powerless while reading or teaching reading.

Students might learn the individual skills to engage with a text, but, because of connections made by the class, a student might see powerful meaning they had not thought of before (legal and other highly technical texts come to mind here). Personally significant issues might not be in play during any given reading activity, but flow might be achieved because a learner might link reading to a clear goal or some other form of attainment.

Studying a teaching and learning experience as a binary—in this case instrumental vs. communicative—limits the ways we might understand any learning experience. Here the theories of Fenwick, Gendlin, and Csikszentmihalyi move us away from what is being taught toward how it is being experienced. These thinkers give researchers ways to bend, probe, explore, and understand more dimensions of learning experiences.

**Fenwick’s Dimensions of Experience**

Tara Fenwick (2003) lays out five dimensions of experience in her book, *Learning through Experience: Troubling Orthodoxies and Intersecting Questions*. Fenwick’s ideas give us dimensions that might layer on top of Dewey’s or Lave’s ideas about experience. Each dimension allows researchers to think more clearly about how one person’s learning experience might differ from another’s. I would call this dimension “design.”
Table 3.1. Fenwick’s Dimensions of Experience

<table>
<thead>
<tr>
<th>Dimension of Experience</th>
<th>Fenwick’s Description</th>
</tr>
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<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>Our approach will affect what we learn. Are we “solving a problem, building a relationship, causing something to change, learning something new, gaining pleasure or entertainment, resting … or some combination of these” (p. 14). We might also have different reasons for why we want to learn. Our learning could be deliberate, spontaneous, reactive or implicit.</td>
</tr>
<tr>
<td><strong>Interpretation</strong></td>
<td>“We … produce our experiences because, among all the complex and contradictory dimensions in a given event, we are highly selective in what we notice and highlight. We make associations based on what we have already seen. We explain things in terms of theories we already hold” (p. 15) as well as our cultural backgrounds and socialized morality.</td>
</tr>
<tr>
<td><strong>Engagement</strong></td>
<td>“We engage in different experiences with a range of positions, processes, and intensity. We may plunge in actively, or observe” (p. 16). Our positionality and our sense of responsibility can also influence our mode of participation.</td>
</tr>
<tr>
<td><strong>Self (and those around the self)</strong></td>
<td>“The self is not single and solitary but woven into different relational networks … our subjectivity, who we are and how we think about who we are, emerges through our engagement within the practices, discourses, moralities, and institutions that are given significance to event in our worlds. We are not even conscious of the various selves we inhabit in everyday experience (pp. 17-18).</td>
</tr>
<tr>
<td><strong>Context</strong></td>
<td>“Here is where the dimension of power and its link to knowledge, language and identity become critical in understanding learning in experience. Here is also where we must seriously consider our entanglements with our cultural contexts before we assume, unproblematically, that we simply enter an experience [and] reflect upon it to make meaning” (p. 19).</td>
</tr>
</tbody>
</table>

An educator may craft an LE for a specific purpose, interpretive goal, and context, but one must consider how experience is conceptualized or designed. Some learning experiences are designed to be to be more open and fluid, while others are scripted and prescriptive. Despite an educator’s intentions, a participant may perceive every one of those dimensions in different ways. Moving from these dimensions, one can move toward other ways of perceiving experience.

**Gendlin’s EXP Scale**

The existential psychologist Eugene Gendlin (Klein, Mathieu, Gendlin, Kiesler, 1969) offers other ways for us to think with and about experience through his Experience Scale (The EXP Scale). Gendlin (1962/1997, 1969) developed a philosophy to think with
and about experience. The scale was initially developed for use in psychotherapy but has been applied in multiple fields (Frye, 2007; Gendlin, 1962/1997). The scale can be used in any setting where the goal is to monitor and change a person's level of expressiveness, self-awareness, and self-understanding. Broadly speaking, these changes can be interpreted as learning. The EXP scale explicitly incorporates four of the dimensions articulated by Fenwick: purpose, interpretation, engagement, and a focus on the self.

Here, in its short form, we can see the seven stages of experiencing Gendlin (1969) laid out (p. 64). Subjects progress from a detached, shallow, and concrete experience (think: the student in the boring worksheet driven classroom that does not want to participate) toward more fluid and reflective experiences.

Based on how an experience is felt, understood, and narrated after the fact, a researcher can begin to classify the richness of any experience through Gendlin's seven stages. One of Gendlin's (1997) goals developing the scale was to “allow us to interpose a medium between the rigidly defined concepts and the unstructured experiencing” (p. 20). While he acknowledged that “a moment’s experiencing contains implicitly so many meanings that no amount of words can exhaust it” (p. 34), he felt that developing a scale focused on how one processes experience would be helpful for social scientists to isolate as a variable for inquiry. Exploring the short EXP scale, one sees how experience can be thought about ranging from shallow and concrete to deeper, fuller, and more flexible experience as one moves up the scale.
Table 3.2. Gendlin’s Short EXP Scale

<table>
<thead>
<tr>
<th>STAGE</th>
<th>CONTENT</th>
<th>TREATMENT</th>
<th>HENDRICKS OVERVIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>External events; refusal to participate.</td>
<td>Impersonal, detached.</td>
<td>• Comments in past tense</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• External events</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Described as flat and self-evident</td>
</tr>
<tr>
<td>2</td>
<td>External events; behavioral or intellectual self-description.</td>
<td>Interested, personal, self-participation</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Personal reactions to external events; limited self-descriptions</td>
<td>Reactive, emotionally involved.</td>
<td>• Descriptive narrative</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Emotions are referred to, but briefly without</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>internal elaboration</td>
</tr>
<tr>
<td>4</td>
<td>Descriptions of feelings and personal experiences.</td>
<td>Self-descriptive; associative.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Problems or propositions about feelings and personal experiences.</td>
<td>Exploratory, elaborative, hypothetical.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Synthesis of readily accessible feelings and experiences to resolve</td>
<td>Feelings vividly expressed, integrative,</td>
<td>• Events are a base from which to sense inward.</td>
</tr>
<tr>
<td></td>
<td>personally significant issues.</td>
<td>conclusive or affirmative.</td>
<td>• Present tense is used</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• There are pauses as words and images form</td>
</tr>
<tr>
<td>7</td>
<td>Full, easy presentation of experiencing; all elements</td>
<td>Expansive, illuminating, confident, buoyant.</td>
<td>• Metaphoric language is used</td>
</tr>
<tr>
<td></td>
<td>confidently integrated.</td>
<td></td>
<td>• Language points to the implicit – ‘it,’ ‘that,’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘something’</td>
</tr>
</tbody>
</table>

Hendricks (2009); Klein et al. (1969)

Gendlin (1962/1997) hopes the scale allows us to “think with the intricacy of situations (experience, practice)” (p. xii). He notes that our experiencing and understanding the concepts surrounding them are “surely not two separated things that have to become ‘related.’ Each is always implicit in the other … even without explicit words or concepts, experiencing is ‘symbolized’ at least by the interactions and situations in which experiencing happens” (p. xii).

The earlier stages of Gendlin’s scale are rich descriptors of states where things are happening, are being done to us, or happening around us, where goal clarity may be absent. Linking back to Immordino-Yang’s (2015) research on the importance of positive emotional states for learning, we can see the lower stages of Gendlin’s scale as
experiences that—at least in the moment—are not likely to have engaging emotional states associated with them and lead to some degree of disengagement.

The EXP scale’s measures interactions that occur in relation to experience moving from detached observation to a place where one tries to resolve personally significant issues in a more expansive whole. The highest stage of the EXP scale has some similarities to Mihaly Csikszentmihalyi’s (1990/2008) ideas about optimal experience—otherwise known as flow.

**Csikszentmihalyi’s Flow**

Csikszentmihalyi (1990/2008) looks at experience through the lens of consciousness, a state he defines as one where “specific conscious events (sensations, feeling, thoughts, intensions) are occurring, and that we are able to direct their course” (p. 26). He notes that it is impossible for us to pay attention to everything we experience, and so we intentionally order information as it is presented to us.

Csikszentmihalyi’s flow state, like the top stages of Gendlin’s EXP scale, are often goal-oriented—although the goal may be broad in scope (to make an exciting painting is one example of this) and challenging to measure objectively. Csikszentmihalyi’s (1990/2008) research suggests when one is in pursuit of a concrete goal like climbing a mountain or a more abstract goal like creating a painting or teaching, one moves from a disordered to ordered consciousness during optimal experience (flow). In this ordered space, flow gives people “a sense of exhilaration, a deep sense of enjoyment that is long cherished and that becomes a landmark in memory for what life should be like … [these moments] usually occur when a person’s body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile” (p. 3).

Nakamura and Csikszentmihalyi (2002) identify five common characteristics of flow:
(1) an intense focus on task;
(2) a merger of action and awareness;
(3) a loss of self / state of no self-consciousness;
(4) control over ones actions—one can readily respond to whatever presents itself; and
(5) time becomes distorted and passes faster than normal.\(^1\) 

Csikszentmihalyi (1990/2008) argues that over time, experiencing flow is the key to growth and mastery of any given domain. He posits that flow gives us a sense of “participation in determining the content of life—that comes as close to what is usually meant by happiness as anything else we can conceivably imagine” (p. 4).\(^2\)

**Participation and Perception**

Csikszentmihaly squarely emphasizes *active participation* in experience as a key toward having a flow experience. Philosopher Maxine Greene (1982) considered this same idea in an educational context. She thought education should “in part, [help us] learn how to think conceptually, to structure experience [and] to look through a wider and more diverse perspective at the lived world” (p. 329). Greene’s idea of fuller experience—like Gendlin’s and Csikszentmihalyi’s—requires structure as well as participation in, and openness to, the lived world. This participation may be more internal, in terms of thinking and being, instead of doing, although these three are often linked.

These ideas have also been probed in empirical research. Scott Berry Kaufman (Kaufman et al., 2016) has shown that openness to new experiences has a strong correlation with creative achievement in the arts. Related studies of multicultural learning

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\(^1\)These ideas don’t just resonate with step seven of Gendlin’s EXP scale but hint at Freud’s description of “oceanic feelings” (1989a; 1989b). These intense feelings are usually associated with aesthetic or religious experiences where one has fragmentally perceptions of being one with the universe.

\(^2\)For an example of how this can work in classrooms, see William Kist’s (2004) research on classrooms that emphasize new literacies.
experiences and foreign travel have been linked to increased generalized trust and creativity (Cao, Galinsky, & Maddux, 2014; Maddux, Adam, & Galinsky, 2010). These findings support Trope and Liberman’s (2010) Construal-Level Theory, which posits that one needs to reframe or create psychological distance from situations to open up to new ways of seeing and thinking. Columbia University scientist Peter Eisenberger (2015) called this process of reframing The Siddhartha Effect, which occurs “when a profound change in reference frame for viewing human reality promotes a major change in behavior.”

Behavioral changes often relate to perceptual changes. Mezirow’s (1978) early work focused on perspective transformation (instead of complete transformation). He suggested that certain educational experiences (like the college re-entry program he studied) might “perform a distinctive function as a catalytic support system for fostering an altered perspective” (p. 8). This could lead to shifting your philosophical orientation so that the purpose for leaning might be reframed and confidence for learners might grow. Actions may shift gradually as a result of these perceptual shifts.

Furthermore, it is possible that this distance and process of perspective taking moves us beyond what Gestalt psychologists call “fixedness.” When we see things in new ways and take things (ideas or concepts) out of their fixed uses (think math knowledge in a textbook), we begin to apply these ideas to new situations, problems, or ways of doing (Boyd & Goldenberg 2013).

Another way to think about active participation in experience might be the creation of, or being moved to, some sort of crisis or dilemma that forces one away from fixedness.

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3It is worth briefly parsing that problem solving may not be creative, but new ways of doing are more likely to be. Csikszentmihalyi’s (1988) work on creativity differentiates the fact that a creative solution or way of doing must be judged as novel or creative by those working in any given field. He also notes that there is a difference between talent and creativity. It is possible that experiential learning fosters both outcomes. The title of this article notes that “problem solving is not finding a new [creative] one.”
and toward new ways of being, thinking, and doing. Other adult learning theories speak to this need to push our existing understandings to new spaces. Jack Mezirow’s (1991) focuses on the “disorienting dilemma” that precedes transformative learning. In a similar vein, Ruth Vinz’s (1996a) explores provocation as an essential way for teachers to reflect, learn, and grow.

Literary scholar Shoshana Felman (Felman & Laub, 1992) has gone so far to suggest that her job as teacher, “paradoxical as it may sound, was that of creating in the class the highest state of crisis that it could withstand, without ‘driving the students crazy’” (p. 53). Jack Mezirow (1991) suggests that transformative learning experiences begin with this type of “disorienting dilemma.” He does not put a positive or negative value on it. He believes, “Anything that moves the individual toward a more inclusive, differentiated, permeable (open to other points of view), and integrated meaning perspective, the validity of which has been established through rational discourse, aids an adult’s development’” (p. 7).

Brookfield (1995, 1997) suggests that a dilemma is not essential to cause perception shifts but that critical reflection may also foster new ways of thinking. These shifts in perspective and meaning may be the proverbial bolt of lightning, while some are seeds that grow over time. Brookfield (2017) argued, during one of his courses on Adult Learning at Columbia University, that education is “rarely transformative in the sense that a big shift happens immediately. Learning experiences often allow learners to get a better handle on things or more nuanced understanding [of a topic or issue] over a long period of time.”

What changes in our reference frames can promote these shifts in understanding that are often referred to as learning? Just as Goldilocks wanted her porridge’s temperature to be “just right,” theorists and researchers know that optimal amounts of stimulation (sometimes thought of as stress and arousal) help learning occur. If there is too much or too little, stimulation performance may suffer. In education, this is often
explained by Lev Vygotsky’s concept of the “zone of proximal development” (ZPD) (Vygotsky & Cole, 1978). Vygotsky’s theory posits that the most effective learning experiences are “not too easy and not too hard” for students. This also relates to the Yerkes-Dodson Law, graphed as an upside-down U curve, where the curve’s peak is one’s optimal level of performance in relation to physiological or mental arousal. Over- or under-arousal reduces performance (Cohen, 2011).

Active participants in a high-EXP or optimal learning experience are stimulated in some way—although that stimulation could be positive or negative. Travel, new environments, psychological distance, critical reflection, provocation, crisis, new peer groups, or novelty may, in any given scenario, increase engagement and move learners toward more “optimal experience.” Gendlin’s work highlights that it is not necessarily the content of the experience that matters but the way it is processed by the learner. This has long been an area of tension in experiential education.

Between Mountains and Moderators (Sherpas)

Although there are always intended and unintended consequences of any given learning experience, every learning experience designer must consider their pedagogical strategies in relation to said experience.

The Association for Experiential Education (AEE, n.d.)—an organization most closely related to outdoor education—defines their practice as “challenge and experience followed by reflection leading to learning and growth.” They elaborate on this definition, adding that “the educator and learner may experience success, failure, adventure, risk-taking and uncertainty, because the outcomes of experience cannot totally be predicted.”

This definition hints at a tension American outdoor educators have grappled with since the post-war period. During that time, educators, inspired by the work of German experiential educator Kurt Hahn, brought outdoor education to formal and informal
school settings. Reflecting on a popular American derivation of Hahn’s work, Outward Bound, Thomas James (1980) developed a useful metaphor that has come to define a central tension that applies to teachers, especially those focused on experiential learning. James’s question is: “Can the mountains speak for themselves?” (James, 1980, 1995; Neill, 2002).

The mountain metaphor is a useful way to think about one continuum related to experiential learning. On one hand, the experience—the mountains students might explore—does most of the teaching and thus “speak for themselves.” On the other end of the continuum, educators use facilitation to process experience. This facilitating and processing was what John Dewey (and others) believed was the essence of learning through experience.

![Diagram](image)

Mountains speak for themselves

Moderators or Sherpas (teachers and students) facilitate processing /reflecting on experience

Figure 3.1. James’s Between Mountains and Moderators

James (1980) thinks people who say, “Let the mountains speak,” are “also saying something more, which is that instructors can rely on the overall structure of the … course to give their students good experiences.” Those comfortable with their choice of mountains and broad goals related to those mountains anticipate the learner’s experience to be rich in social emotional and intellectual learning. In the best cases, learners may enter the top levels of the EXP scale or states of flow.

It is important to remember that, in addition to the learners, their teachers (moderators), and their environment (mountains), there are also many social and cultural
variables related to change, growth, and cognition (Heath & Heath, 2010; Lieberman, 2013). The other learners in the experience, or even surrounding elements, can be more important than a formal moderator. Psychological research on “the power of the situation” (Sommers, 2011), which includes famous studies like Milgrim’s electric shock experiments, highlights the importance of environmental factors in relation to learning and behavior.

In any experience, regardless of its design, intention, and setting, we might experience what Gendlin (1978) called an implicit or “felt sense” that shifts our thinking. A study that suggests the power of the implicit, unspoken, or prelinguistic role in transformative learning experiences was undertaken by Gordon Ball (1999). His study looked at what caused adults to dramatically realign their lives around ecological sustainability. Although his study was small (14 participants), he found that:

The lives of this group of participants did not typically allow for discrete or extensive reflection and self-scrutiny, nor did most of them report it. It is no doubt tempting, particularly among academics, to believe that a transformative learning experience is normally followed by a period of self-reflection and critical analysis of prior assumptions. In some cases, this phase seemed to be skipped entirely, or to occur concurrently with either the experience itself or subsequent behaviour changes; people often seemed to move directly from one way of being and behaving to another. (p. 260)

Ball did not rule out the fact that less formal or subconscious reflection may be taking place. Perhaps the transformative experiences Ball studied were so provocative and contradictory that they provoked informal reflection and new ways of seeing the world.

John Broughton’s (1977) research can be paired with Ball’s findings. Perhaps reflection is not something we always access, or something we actively do. This passage about formal operations in adolescence aligns with Gendlin’s ideas about implicit adult reflection:

Reflective self-consciousness is not reducible to “thinking about thinking.” It is close to “thinking about the self,” although to be precise it is an implicit awareness of the self as knower—a kind of knowledge that one might do well not to call “thinking” at all. This reflective awareness does not
need to be Locke’s “inward eye” that explicitly introspects … it is a general feature of cognition, not an occasional luxury. (p. 4)

This implicit cognitive process is what Gendlin refers to as the “felt sense” and what the EXP scale is designed to measure. Sometimes high scores on the EXP scale do not have explicit articulations of ideas, but there is a strong “sense” of something that the learner has an awareness of that can’t quite be articulated in words or images (Hendricks, 1986; Nicholls, 2009). This is certainly a part of what a learner can experience in the metaphorical mountains of any learning experience.

On the other side of James’s continuum is a more Deweyan way of thinking about learning—through formal moderators/facilitators. Extending James’s metaphor, we can think of moderators as Sherpas, the Nepalese ethnic group known for their climbing skills and superior strength and endurance at high altitudes. When climbers tackle Mount Everest, Sherpas are hired to clear paths and coordinate with locals to help climbers reach the summit alive and get home safely.

Moderating or structuring for formal reflection is a common technique recommended by adult educators such as Stephen Brookfield (1995), Ruth Vinz (1996a), and Jack Mezirow (1991). These thinkers theorize that critical reflection is essential to encourage learning breakthroughs and transformations. They urge teachers to help learners’ processes in relation to the experience—what made sense, what did not? Finally, they value students and teachers probing the premises of their beliefs. According to Mezirow (1991), this third stage of reflection presents the possibility of transforming the way learners see the world by “bringing … one’s assumptions, premises, criteria, and schemata into consciousness and vigorously critiquing them” (p. 29). Educators are in the role of the Sherpas that help facilitate these types of reflection.

Brookfield (1995) states that we can gather insight through critical reflection on teaching practice and experience when two distinctive criteria are in play. He suggests we should “understand how considerations of power undergird, frame, and distort
educational processes and interactions” and “question assumptions and practices that seem to make our teaching lives easier but actually work against our own best long-term interests” (p. 8). To get these more nuanced understandings, Vinz (1996a) suggests that teacher reflection should “support teachers in ‘seeing themselves seeing’ rather than telling them how to see” (p. 123). Her concerns mirror Brookfield’s; they both focus on helping educators understanding themselves, “their purposes consonant with their instructional and structural practices” (p. 123).

Working with teachers, Vinz (1996a) suggests that one way to get teachers to be more reflective is “provoking through contradiction” (p. 86). She notes that provocation—not necessarily formal processing—is in and of itself a teaching move that can pivot learners toward reflection and, ultimately, learning.

Reflection is likely always present in an implicit or explicit form. Jordi (2011) talks about ways to navigate this continuum when he suggests, “Reflective practices can facilitate a learning dialogue between our implicit embodied experience and conceptual aspects of our consciousness” (p. 181). This idea leaves educators on a continuous and shifting journey between the valleys and moderators.

In the cultural studies tradition, Henriques, Hollway, Urwin, Venn, & Walkerdine (1998) suggest that self-reflection or understanding our subjectivity in any setting is:

a process of finding yourself becoming a subject over the course of an infinite series of encounters, involving reflexivity and creativity in the imaginative transformation of desire and anxiety. The effort and desire involved in communication provoke a self that is new to oneself, specific to that encounter. (p. xvii)

These ideas about what makes a learning experience powerful or useful should not be seen as positive or negative but an illustration of nuance in relation to the mountain/moderators tension. Henriques et al. would agree with the AEE’s idea that “the outcomes of experience cannot totally be predicted.”
The idea that much learning is emergent, and unanticipated, is a challenge for researchers. This lack of predictability makes studying the overt impact of experiential learning complex. With a highly prescriptive curriculum, there can be clearer, more easily measured outcomes related to specific learning targets and objectives. Open learning experiences with a range of possible expectations require more open assessments of learning.

That said, assessing reflection as a classroom teacher or researcher is not without its own challenges. Brookfield and James (2014) carefully note:

Any time we tie reflection to the evaluation and assessment of students’ reflection it becomes an exercise of teacher power. Of course, pretty much everything we do in our formal role as teachers is an exercise of power, and often this power is used for good, is enacted ethically, and is fully justifiable. But we should also always remember that when we require students to reflect, and when we grade their efforts, we are not working solely from a student-centered ethic. (p. 22)

Vinz (1996a) echoes these concerns, reminding us that reflection on experience “will not be successful if immediate and measurable results are the goal” (p. 123). Awareness of these systemic pressures can help us think more carefully about how we structure any formal reflection.

Whether we think about learning as implicit (created by the mountains) or explicitly developed through formal reflection (moderators), Dewey would likely consider both. He would want learners to formally reflect on their mountain experience, but he would also want us to work with learners to select the most interesting mountains. In the final chapters of *Experience and Education*, Dewey (1938/1997) advises teachers to select and organize subject matter “found in the present life-experience of the learner”

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4 Of course, there are plenty of rich covert or subtextual outcomes of more prescriptive curriculum. This is not a common focus of a majority of the mainstream, evidence-based research that informs K-12 educational policy. An example thinking above, below, and around traditional curriculum is Brookfield’s (2005) study about practicing repressive tolerance can undermine democratic classroom discussion.
Collectively, the nature of experience and the structure and facilitation of any learning event lead to a central question for educators. How should one design learning experiences that are “just right” for any given learner or group? Here we can look toward existing pedagogical traditions as a springboard for the ways teachers might design experiential learning events.

Experiential Learning: Theories and Intellectual Traditions

The curious mind is constantly alert and exploring, seeking material for thought, as a vigorous and healthy body is on the qui vive for nutriment. Eagerness for experience, for new and varied contacts, is found where wonder is found. Such curiosity is the only sure guarantee of the acquisition of the primary facts upon which inference must base itself. (John Dewey, 1910, p. 31)

Beyond Dewey

When it comes to experience and education in the United States, philosopher and educator John Dewey is a reasonable place to start. His research, writing, and the laboratory school he founded at the University of Chicago put experience and doing at the center of student learning. His ideas about the curious mind being “eager for experience” focus on the engagement dimension articulated by Fenwick and align with the ideas of optimal and rich experience presented by Gendlin and Csikszentmihalyi.

Since Dewey’s groundbreaking work, many terms have been used by educators and researchers to describe broader open-ended, collaborative, and culturally connected experiential learning. These types of learning experiences might (depending on the emphasis of the work) fall under this umbrella, including: liberatory, transformative, emancipatory, expeditionary, culturally relevant, dialogical, service learning, student-
centered, place-based, play-based, Montessori, differentiated, media literacy, or problem-based learning experiences. Each of these terms carries a slightly different connotation and theoretical orientation.

In addition, many of these labels assume an outcome, e.g., one involved in a liberatory or transformative learning experience would be liberated from some oppressive force or transformed into a new person. One who engages with a culturally relevant learning event will suddenly have deep understandings of new cultures. Assuming any single thing will happen during any type of learning experience is problematic given the complex and multilayered nature of any experience. Indeed, Jim Knight (2015) of the University of Kansas Coaching Center, addressing a group of educational policymakers in Washington D.C. about the challenges teachers face, pointed out:

There are different kinds of tasks. One kind of task is a simple task, baking a cake… The second kind of task is a complicated task. A complicated task is one that involves an awful lot but once you resolve it you can do it again and again and again, for example putting a person on the moon is a complicated task. Once you’ve done it you can keep doing it. You’ve solved the problem, same things over and over again, you should get the same solutions. A complex task is teaching a classroom … because it changes all the time, because a recipe won’t solve the problem.

This complexity of experience and teaching is one reason educational researchers have begun to turn to complexity theory (Mason, 2009; Snyder, 2013) in an attempt to understand what happens in the classroom. With that in mind, it is clear that no single pedagogical approach is a panacea for whatever learning successes and difficulties a teacher may encounter.

This complexity can, at times, make it difficult to synthesize the related literature around more experimental education because it contains unique terminologies, divergent foci, and an eclectic array of methodologies. The broad concepts of experiential learning, culture, or “connecting to cultures” are transdisciplinary in the sense that almost every
educational discipline explores some variation of these concepts but rarely in a completely uniform way.

Inclusion of a wider literature review of multiple—if sometimes conflicted—intellectual traditions reveals more nuanced ways to explore the question, “What happens during and after experiential learning events?” Specifically, what did people perceive as happening? How did it happen? For whom? Why?

**Toward Experiential Pedagogies**

Educators working in the theoretical frameworks of liberal humanism, cultural studies, or critical pedagogy have an interest in the everyday and generally hope to “play a positive role in the making of a more just, equitable and humane society” (Liston & Zeichner, 1991, p. 134). Taken as a whole, these traditions focus on creating engaging, challenging, joyful learning experiences to make schooling—on good days—useful for learners, their communities, and the planet. They go about doing this in different ways.

In addition to thinking about the theories and dimensions of experience, the tension between mountains and moderation, it is also helpful to review pedagogical theories. The neo-liberal educational paradigm is the dominant paradigm informally discussed in earlier chapters. This is certainly an important part of the pedagogical continuum but not seen as an ideal in relation to experiential pedagogies. The focus here will be to review some of the literature as it relates to liberalism, cultural studies, and critical pedagogy. These are traditions that inform the learning experiences that are the focus of this inquiry.

**Liberalism**

James Marshall (1996) suggests that liberalism is not “a basic set of basic ideas or principles but, rather as an attitude of mind” (p. 56). This attitude tends to be concerned with individual freedoms from the church, state, or political parties. Furthermore, it puts rational faith in formal education as a vehicle for the progress of human beings.
The socially progressive liberal humanist tradition in the United States is linked to educational thinkers like John Dewey, Maxine Greene, and the pedagogue Alfie Kohn. These theories have led me to work toward educational spaces where “opportunities for the articulation of multiple perspectives in multiple idioms, out of which something common can be brought into being [with a] consciousness of the normative as well as the possible” (Greene, 1988, p. xi).

Practically speaking, an educator like Alfie Kohn (2004) supports a “renewal” of public schools focused on “meaningful standards of excellence [that focuses on things like] social reasoning, empirical reasoning, quantitative reasoning, communication, and personal qualities (such as responsibility, capacity for leadership and self-awareness)” (p. 9). Greene (2001) comes at the liberal tradition with a poetic bent and wants:

> to make possible … the living of lyrical moments, moments at which human beings (free to feel, to know and to imagine) suddenly understand their own lives in relation to all that surrounds. Young people, older people are constantly prevented from doing this. Their lives, even the things they are taught, are broken into fragments, categorized, compartmentalized. (p. 7)

Liberal educational practices, because they want to find ways to give students some choice and efficacy, also tie into pedagogies and theories that value difference and differentiation, often in relation to relatively established bodies of knowledge (Armstrong, 2016; Gardner, 2011; Page, 2008; Rose, 2015; Tomlinson, 1999).

Research on the liberal humanist tradition of experiential education in the United States often locates John Dewey’s creation of and work at the Laboratory School from 1896-1904 at the University of Chicago as a strong starting point. One reason Dewey formed the Lab School was to attempt to transfer his ideas about democratic and experiential learning into practical forms.

In her history of Dewey’s school, Laurel N. Tanner (1997) builds on Dewey’s reports and those of the school’s teachers to synthesize what she perceives as valuable lessons for contemporary educators. According to Tanner, experiential learning increased
students’ intellectual horizons and expanded their abilities to improve a process or situation individually and abilities to interact in a social setting. Building curriculum around student interests also allowed for deeper student engagement and learning in relation to the subject under study. With relation to issues of power, Tanner also reported the Lab School increased gender equity.

From the educators’ vantage point, Lab School teachers focused on curricula because “segmental [school] reforms will never do much if there is something not right about the curriculum”\(^5\) (Tanner, 1997, p. 166). For administration, the Lab School realized the importance of creating a balanced curriculum. It also highlighted the importance of not separating the student from the subject they are studying. Teachers also learned to think vertically about curriculum with a deep sense of “what is next” for a student. This predates the “beginning with the end in mind” idea espoused by McTighe and Wiggins (2005). McTighe and Wiggins urge educators to build curriculum around assessments that show what students know and are able to do. For them, each assessment is a step on ladder, and assessments are the rungs on the ladder of curriculum and learning.

Tanner’s (1997) lessons learned from Dewey’s school are reinforced by findings in smaller studies. A comparison of problem-based learning (PBL) curriculum in 4th grade science classes in relation to a class dominated by direct instruction found many advantages for learners (Drake & Long, 2009). Students in the PBL classrooms had deeper content knowledge, were less likely to have stereotypical ideas about scientists,

\(^5\)As someone who works in a large, five high school district as a teaching and learning coordinator, it is hard to overstate just how contemporary and insightful this observation remains. Of course, strong teaching strategies (see the previously mentioned work of John Hattie, 2012) can impact learning. That said, if they are used in service of an uninspiring curriculum, they often create short-term gains. In my experience, curriculum is built around rote activities, and knowledge-centered work has a very low ceiling in relation to what learners may experience or retain over time.
and were able to generate more problem-solving strategies than their peers. In another science-based setting, Kang, DeChenne, and Smith (2012) used an experimental design to study two high school Environmental Health curricula. Students using the experiential and inquiry-based curriculum were found to be significantly more involved in learning tasks as measured by their ability to generate active inquiry questions and hypotheses-driven approaches in relation to their inquiries.

Outside of the formal school setting, Seaman and Rheingold (2013) studied the use of circle talks (student-led discussions) in a multi-week diversity-themed high school experiential learning event. This summer camp experience included adventure-learning, team-building, and service learning with circle talks interspersed among experiences. The researchers found that students developed new perceptions and conceptualizations of “diversity”; attitudes about the self shifted through these social interactions over time.

These types of student-centered pedagogies built around active learning align with the findings of a large meta-study done by Linda Darling-Hammond and her research team (2008) at Stanford. This team did not ask, “What happens during experiential learning?” but instead, “What makes powerful learning at the K-12 level?” They define deeper and meaningful learning as the type that “enables critical thinking, flexible problem solving, and transfer of skills and use of knowledge in new situations” (p. 2). Their major findings (Barron & Darling-Hammond, 2008) lean toward the types of practices associated with experiential learning:

- Students learn more deeply when they can apply classroom-gathered knowledge to real-world problems, and when they take part in projects that require sustained engagement and collaboration.
- Active-learning practices have a more significant impact on student performance (on traditional metrics) than any other variable, including student background and prior achievement.
- Students are most successful when they are taught how to learn as well as what to learn.

At the adult level, undergraduate engineering students involved in experiential learning were able to think more creatively based on multiple metrics (Ayob, Majid,
Hussain, & Mustaffa, 2012). Multidisciplinary teams of clinical psychologists in the UK working in experiential learning groups during their training with the National Health Service found that problem-based-learning scenarios were helpful in teaching individuals to work effectively with teams (Keville et al., 2016).

All these studies build on Dewey’s ideas about more open-ended and experiential learning as a conduit to enhance students’ ability to collaborate, inquire, problem solve, create, and reflect on one’s self in relation to a group. Taken together, these studies are not definitive, but they speak to a wide range of possible benefits linked to experiential learning in a variety of settings.

**Cultural Studies (CS)**

Broughton (2010) differentiates the liberal humanist tradition from cultural studies (CS) approach: “The liberal agenda, in education as elsewhere, tends to stress expertise and meritocracy, valorizing professionalism and putting its trust in established systems of advancement. Typically, it ignores relations of power and authority” (p. 327). Furthermore, liberal thinkers like Dewey, Greene, and Kohn often emphasize highbrow conceptualizations of culture. They don’t exclude popular cultures, but this is not their focus.

CS was first officially situated at the Centre for Contemporary Culture Studies (CCCS) at the University of Birmingham in England. Early CS work parallels this study with a focus on adult education and “the uses of literacy” in popular and everyday cultures (Casella, 1999; Hoggart, 1957/1992; Storey, 1996). The tradition of CS in schools creates spaces “to take seriously people’s everyday interactions with the world and to evaluate and understand better not just the individuals themselves and the structures around them, but the interactions between the two” (Casella, 1999, p. 114).
CS pedagogies allow educational energy to empower [learners], encourage their creativity, capitalize on their subjective involvement, and allow them to develop their [existing expertise]. As a result, new levels of academic motivation may be fostered, forging new connections between work and leisure activities … breaking down the boundary between curricular and extra-curricular activities. (Broughton, 2010, p. 333)

In the realm of CS, the focus related to experiential learning shifts. Here the integration of popular cultures is valued in classroom curricula, power relations are explored, and the best research points toward dynamic and contextual understandings of experiential learning. As articulated by Frymer, Carlin, and Broughton (2011):

While schools continue to serve as a focus of cultural studies research, there has always been more intent on analyzing the forms of informal educational and learning processes existing outside of the institutional boundaries of the school that traditionally defined education as a field. (p. 1)

David Buckingham and Julian Sefton-Green’s (1994) study, Cultural Studies Goes to School, is an example of how CS researchers look and work inside and outside the classroom. Their inquiry explored upper-level high school Media Studies courses co-taught by the authors in England over four years. Experiential learning in that context was built around comprehending, critiquing, and creating popular texts in the classroom. Some projects were directly linked to the exploration of out-of-school cultures. Buckingham and Sefton-Green make the case that:

Young people actively use popular media as a symbolic resource for creating their own meanings and social identities. Yet we have also sought to distance ourselves from a celebratory account of this process, which would see young people as wholly autonomous and popular culture as a form of “resistance” to dominant ideologies. As we have shown the ideological consequences of “activity” on the part of audiences cannot be determined in the abstract: “active” readings are of course not necessarily “resistant” or “empowering.” Young people’s use of the media often involves both “resistance” and “reproduction”; and its ideological significance needs to be interpreted within the social contexts of interpersonal relationships in which it is situated. (p. 211)
With an eye toward the complexities and contexts of any experiential learning design, they also suggest a dramatic need to re-assess traditional high school English curricula “to be based on much broader notions of literacy and culture than those which currently prevail” (p. 217).

Another study of the uses of a CS approach that embraces popular culture for experiential learning in elementary classrooms reveals more transgressive findings (Grace & Tobin, 1998). Young students used video productions to create parodies of their favorite books. The students were given freedom and choice around the stories they would create in their videos. This was a way to value the knowledge and interests learners bring from pop culture without appropriating them. The title of their study, “Butt Jokes and Mean Teacher Parodies,” alludes to the carnivalesque (Bakhtin, 1968) nature of cultural production in schools. Allowing choice and popular cultures into class and centering curriculum on students’ interests instead of teachers’, increased pleasure and learning for students while upending the power structure in the class—making it more fluid. In this space the, “unseen and unsaid in school life materialized, new questions were posed and alternatives presented. These instances represented a temporary break with the everyday and offered multiple possibilities and outcomes” (Grace & Tobin, 1998, p. 59).

These transgressive possibilities are studied extensively in John Fiske’s (1993) work studying adults in cultural settings. He studies the uses of culture in relation to “the struggle to control and contribute to the social circulation and uses of meanings, knowledges, pleasures and values” (p. 13). Sometimes groups of people might use popular culture for pleasure; sometimes popular culture might be used for resisting a power structure and other times replicating the values of dominant cultural formations. This multiplicity of uses is what Broughton (2010) refers to as “potential lines of cultivation, where culture always contains moments of activism and insurgency” (p. 335).
Overall, these studies framed by the cultural studies tradition are a reminder that the uses of any cultural text, practice, or space is always subject to multiple interpretive possibilities and complex cultural contexts. Case studies in the liberal tradition often have more fixed answers around Fenwick’s dimensions of experiential learning: Purpose, Interpretation, Engagement, Self (and those around the self), and Context. Experiential pedagogies grounded in CS generally have more ambiguity or a wider range of possibilities in relation to the experiential dimensions. CS allows does not often stress expertise and creates spaces for pleasure, transgression, resistance, reproduction (of dominant ideologies), liberation, social justice, and the emergence of new – even if transient – cultural formations. No single outcome is assumed, despite the fact that the cultural formations surrounding education and schools have a preferred set of outcomes.

**Critical Pedagogies**

While cultural studies is usually more open than the Marxist tradition of critical pedagogy (see Hytten, 1999, as an example), there is often conflation between the two traditions. Brazilian educator Paulo Freire’s (1993) work, *Pedagogy of the Oppressed*, is the watershed work for critical pedagogy. His articulation of “the dialogic”—the belief that humans create and recreate ourselves through dialogue—and the idea of “conscientização”—“learning to perceive social, political, and economic contradictions, and to take action against the oppressive elements of reality” (p. 35)—emerge as essential theoretical concepts. These ideas are further developed by educators and researchers like Joe Kincheloe (2008a, 2008b), Henry Giroux (2005, 2013, 2016), and bell hooks (2003, 2010, 2014).

Critical Pedagogy comes from Critical Theory and developed in parallel to cultural studies. Both orientations value interdisciplinary “culture work” and “border crossing” (Giroux, 2005). That said, critical pedagogy tends toward a more antagonistic, oppositional, radical, and binary ways of teaching and learning in comparison to uses of
cultural studies in schools. Critical pedagogy is mentioned for three reasons: First, some of the literature that follows hybridizes or conflates critical pedagogies with both the liberal humanist project (see, as an example, Price and Ball, 1998) and or cultural studies in schools (see Hytten, 1999).

Second, some experiential learning participants’ subjective experiences may align with descriptors of critical pedagogy. Learners entering into dialogue with each other or figures with some authority might report something akin to a dialogic experience. They might also experience a heightened awareness of oppressive school systems and not—as cultural studies might prefer—a more creative, involved, empowered pathway to develop their expertise.

The third reason refers back to the traditions that might capture my conceptualization of experiential learning. Many terms related to experiential learning speak to the liberal humanist and cultural studies conceptualization without directly connecting to these traditions.

With these three reasons in mind, the literature review revealed some studies firmly situated in cultural studies that morphed toward reflections on critical pedagogy. These seemed instructive around additional possibilities for what might happen during and after experiential learning events. At the elementary level, the creation of a culturally based math project in Alaska (Lipka et al., 2016) designed experiential learning around a simulation building a fish rack, which is a traditional practice used by Yup’ik elders to dry salmon. On one hand, the experiential learning event challenged traditional academic literacies by incorporating everyday cultures. Simultaneously, the curriculum designers also framed this work in a Freirean lens, hoping for liberatory outcomes. They studied the effects of this curriculum with a cultural “insider” and “outsider” teaching the curriculum. They found the insider could give students more control of the curriculum while allowing for more student questioning, while the outsider deepened their content knowledge. In both cases, ethnographic methods suggested increased trust between
teacher and student as well as a “third space” that brought Yup’ik knowledge together with traditional Western mathematical concepts.

At the secondary level, Morrell’s (2004) and Kirkland’s (2013) work suggests fusions of cultural studies and critical pedagogy in urban settings. Both studies are hybrids of CS and critical theory and look at the values of opening spaces for “counter-hegemonic curricula.” Morrell (2004) highlights the relevance of popular culture for adolescents, its motivating power, and the rigorous literacy practices it can allow students to develop. Kirkland (2013) implores teachers to open up and expand traditional curriculum to let more students in. That said, Kirkland and Morell are activists in a way that embraces the liberatory agenda of critical pedagogy. Both educators allow for students to critique and create popular cultures, but desire for clear social justice outcomes is not as common in CS. CS allows for resistance and reproduction. It also attempts to find points of inquiry, authority, and value in all cultural formations without assuming a single proper culture in any given context or situation. CS attempts to avoid heavy-handed prescriptions for the cultural formations that might emerge from any given learning experience. Critical pedagogy is not generally concerned with culture.

Where cultural studies is less certain about the outcomes of experiential learning, critical pedagogues are usually looking to liberate or emancipate learners in some explicit way. Looking at science education, Laughter and Adams’s (2012) study of culturally-relevant science teaching in middle schools integrated social justice issues into science curriculum using science fiction stories. They found that this experiential learning event helped students see science in a larger context that directly related to their lives and to tackle larger issues—in this case, bias in science as related to issues of race and discrimination. Notably, doing this type of science teaching found the co-author, who was also a novice teacher, filled with anxiety about shifting to this type of practice because she “really thought it was going to be the end of her career” (p. 1130). Here issues of power and control of knowledge emerge, although they are not the direct focus
of the study. The challenges involved with culturally-based teaching led the authors to recommend science methods courses for pre-service teachers to find ways to incorporate these methods into teacher training.

Barton’s (1997) research also makes social justice assertions in relation to teacher training. She is explicit about the need to incorporate a feminist lens into science “through a knowledge of critiques of science on the part of teachers [that allows them to] place science in context, as embodying a broader ideology rather than as a revered set of unbiased, impartial truths” (p. 161).

Price and Ball’s (1998) study of pre-service mathematics teachers probed the way in which mathematics is presented in textbooks and schools of education. As they worked to develop liberatory pedagogies with math teachers, they concluded that this type of teaching requires learners to think more carefully about their assumptions about teaching. They posed an open question, wondering if liberatory teaching might not be something beginning teachers can be taught because of its complexity. On the other hand, they strongly felt teacher educators must help teachers develop a social vision and a practice.

Price and Ball (1998) present no easy answers and suggest teaching attuned to students’ possibilities is complex. As a first step, they suggest a deep attentiveness to who the learners are and their individual and collective situations. While a CS approach does not foreclose consciousness raising, the liberatory approach implies that one is being freed from a power structure—a hallmark of critical pedagogy.

Organizing Themes

A small-scale discourse analysis of elementary teachers working “within and against prevailing meanings of schooling” offered a broad observation that any teacher working against dominant meanings of schools can be considered a “tempered radical” (Carlone, Haun-Frank, & Kimmel, 2010, p. 961). This idea of the “tempered radical”
may be useful when thinking about teachers in the Liberal, CS, or Critical Pedagogy traditions working in opposition to dominant—often neoliberal—traditions of schooling.

Each theoretical tradition and accompanying research presents some organizing themes. Liberal humanist research into experimental learning expresses more engagement, content knowledge, creativity, and problem-solving abilities. There was also a suggestion in this tradition that exposure to more authentic learning environments may counteract stereotypes.

Experiential learning anchored in the CS tradition engaged in further complexities by exploring issues of context, trust, power, and everyday cultures. CS also presents a focus around the use of cultural discourse, artifacts, situations, and spaces where culture can be preserved and challenged, produced, or reproduced.

Studies linked to the critical pedagogy tradition have clearer goals around action and social justice that are often coupled with raising participants’ awareness of power structures. In many cases, researchers cite a need for additional teacher training around these types of pedagogies. Some of these studies present the critical pedagogy tradition as complex and complicated. When a teacher looks for a specific, activist outcome, the reality is often not that simple.

When thinking about any of these traditions in schools dominated by neo-liberal pedagogies, any teacher that pushes beyond content knowledge and attainment may, at minimum, be perceived by the system as a tempered radical. Table 3.3 is an attempt to differentiate the four traditions explored in the introduction (neo-liberal) and Chapter IV as a tool to think about the nature of experience and experiential learning. The figure attempts to capture some ways to think about these traditions and their boundaries in relation to Fenwick’s Dimensions of Experience.
Table 3.3. An Experiential Learning Pedagogical Traditions Continuum: Experiential

There are always hybrids and mixed appropriations and most educators minimally move between two traditions if not more. While most formal K-12 settings in the US work with a Neo-Liberal orientation, many aspire toward liberal practice. CS & Critical pedagogy traditions are rarely inform an entire classroom / school / district. Attributes of each tradition are organized using Tara Fenwick’s (2003) five dimensions of experience from her book, Learning through Experience: Troubling Orthodoxies and Intersecting Questions.

<table>
<thead>
<tr>
<th>NEO-LIBERAL</th>
<th>LIBERAL-HUMANIST</th>
<th>CULTURAL STUDIES</th>
<th>CRITICAL PEDAGOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXECUTIVE (Fenstermacher &amp; Soltis, 2009)</td>
<td>FACILITATOR (Fenstermacher &amp; Soltis, 2009)</td>
<td>COMMUNICATIVE (Mezirow, 1991)</td>
<td>LIBERATIONIST (Fenstermacher &amp; Soltis, 2009)</td>
</tr>
<tr>
<td>Build Economic &amp; Military Might</td>
<td>Maintain Democratic Excellence</td>
<td>Inquiry &amp; Enjoyment</td>
<td>Challenge &amp; Engagement – Problem Posing</td>
</tr>
<tr>
<td>Global Competition</td>
<td>Reward Hard Work</td>
<td>Flow &amp; meaning</td>
<td>Conflict / change</td>
</tr>
<tr>
<td>Teacher = enforcer/judge</td>
<td>Teacher = coach/gatekeeper</td>
<td>Teacher = Curator / Connector</td>
<td></td>
</tr>
<tr>
<td>Career/Workforce</td>
<td>College</td>
<td>Engage w/ Cultural Forms</td>
<td></td>
</tr>
<tr>
<td>Competition</td>
<td>Collaboration/Coordination</td>
<td>Creation: personal &amp; cultural meaning</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>Develop diverse citizens</td>
<td>Value Participation</td>
<td></td>
</tr>
<tr>
<td>Economic Attainment</td>
<td>Progress toward better selves</td>
<td>Explore possible of cultural formations</td>
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</tr>
<tr>
<td>Preserve culture</td>
<td>Progress related to best cultures</td>
<td>Connect cultures &amp; subcultures</td>
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<tr>
<td>Economic</td>
<td>Moral</td>
<td>Psychological</td>
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</table>

**INTERPRETATION**

We … produce our experiences because, among all the complex and contradictory dimensions in a given event, we are highly selective in what we notice and highlight. We make associations based on what we have already seen. We explain things in terms of theories we already hold” (Fenwick, p. 15) as well as our cultural backgrounds and socialized morality.

<table>
<thead>
<tr>
<th>Knowledge = Formal &amp; Symbolic</th>
<th>Knowledge = skills that create merit</th>
<th>Knowledge = possible ways of being</th>
<th>Knowledge = Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sameness/Human Capitol</td>
<td>Concepts</td>
<td>Cultures / Cultural Formations</td>
<td>Challenges</td>
</tr>
<tr>
<td>Individual/Independent Agents</td>
<td>Citizens</td>
<td>Standards/Responsabilities</td>
<td>Identity focused</td>
</tr>
<tr>
<td>Procedures/Mandates</td>
<td>Possibilities of individual as citizen</td>
<td>Open &amp; meaning making</td>
<td>Consciousness raising</td>
</tr>
<tr>
<td>Norms/Normative</td>
<td>Array of established pathways</td>
<td>Cultural relevance</td>
<td>Dialogic/Critical</td>
</tr>
<tr>
<td>Professional value</td>
<td>Best Traditions</td>
<td>Personal meanings</td>
<td>Social &amp; cultural implications</td>
</tr>
<tr>
<td>Metrics</td>
<td>Diverse points-of-view</td>
<td>Play / fluidity moments of activism</td>
<td>Counter hegemonic possibilities</td>
</tr>
<tr>
<td>Single-point-of-view</td>
<td></td>
<td>Different, shifting points-of-view</td>
<td>Antagonistic points-of-view</td>
</tr>
</tbody>
</table>

**ENGAGEMENT**

We engage in different experiences with a range of positions, processes, and intensity. We may plunge in actively, or observe … or some combination of these” (p. 14). We might also have different reasons for why we want to learn. Our learning could be deliberate, spontaneous, reactive or implicit.

<table>
<thead>
<tr>
<th>Punishment &amp; Reward</th>
<th>Bounded inquiry</th>
<th>“Multiple lines of cultivation”</th>
<th>Counter hegemonic understandings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule driven</td>
<td>Egalitarian / Progressive</td>
<td>Open to new rules</td>
<td>Rule breaking</td>
</tr>
<tr>
<td>Focused on disciplines</td>
<td>Focused on social value can be interdisciplinary</td>
<td>Focused on cultural interests / interdisciplinary</td>
<td>Issue focused on social justice action</td>
</tr>
<tr>
<td>Mandates/targets &amp; measurable outcomes</td>
<td>Democratic processes &amp; outcomes</td>
<td>Unknown outcomes but we sure had fun!</td>
<td>Power sources / problematize</td>
</tr>
<tr>
<td>Memorize &amp; Utilize</td>
<td>How to learn / Problem-Solve</td>
<td>Playful / Springboard</td>
<td>Done for learners</td>
</tr>
<tr>
<td>Done to learners</td>
<td></td>
<td>Done with learners</td>
<td></td>
</tr>
</tbody>
</table>

**SELF**

“The self is not single and solitary but woven into different relational networks … our subjectivity, who we are and how we think about who we are, emerges through our engagement within the practices, discourses, moralities, and institutions that are given significance to event in our worlds. We are not even conscious of the various selves we inhabit in everyday experience” (Fenwick, pp. 17-18).

<table>
<thead>
<tr>
<th>Measured by mandates and fuels</th>
<th>Measured by democratic contributions</th>
<th>“co-creation”</th>
<th>Measured by changes in thought and culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the career implications?</td>
<td>What can we add as a citizen?</td>
<td>What cultures do we engage with?</td>
<td>Systems vs. self / collective groups</td>
</tr>
<tr>
<td>Academic discipline vs. self</td>
<td>Academic disciplines + learner</td>
<td>Wait? This is learning? Let me reflect on that.</td>
<td>Academic discipline + powers + self</td>
</tr>
<tr>
<td>Focus on what we must learn</td>
<td>Focus on how we learn.</td>
<td>Anything allows for messy &amp; engaged learning</td>
<td>Focus on who we can teach.</td>
</tr>
</tbody>
</table>
Table 3.3 (continued)

<table>
<thead>
<tr>
<th>NEO-LIBERAL</th>
<th>LIBERAL-HUMANIST</th>
<th>CULTURAL STUDIES</th>
<th>CRITICAL PEDAGOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTEXT</strong></td>
<td>“Here is where the dimension of power and its link to knowledge, language and identity become critical in understanding learning in experience. Here is also where we must seriously consider our entanglements with our cultural contexts before we assume, unproblematically, that we simply enter an experience [and] reflect upon it to make meaning” (Fenwick, p. 19).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>School-based, regulated by business, gov. &amp; schools</strong></td>
<td>Schools connecting with communities - can build on / improve established systems</td>
<td>New &amp; existing cultural formations inside and outside of school</td>
<td>Formal and informal educational settings often concerned with oppressed populations</td>
</tr>
<tr>
<td>Individuals</td>
<td>Interdependent Citizens</td>
<td>Cultural Collaborators</td>
<td>Activist / Agents of Change</td>
</tr>
<tr>
<td>Closed, rigid systems</td>
<td>Systemic practices</td>
<td>Play with Cultural formations</td>
<td>“fight the power”</td>
</tr>
<tr>
<td>Instrumental / binary / established content</td>
<td>Fair amount of choice/freedom around content</td>
<td>Context framed with individual / cultural interests</td>
<td>Content aligned to pressing social needs</td>
</tr>
<tr>
<td><strong>DESIGN</strong></td>
<td>Prescriptive and scripted built around knowledge</td>
<td>Structured with choice around skills</td>
<td>Open, fluid, emergent in relation to content</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Focused on action and usually social justice</td>
</tr>
<tr>
<td><strong>POSSIBLE METAPHORS</strong></td>
<td>Lakoff &amp; Johnson (1983) suggest metaphors suggest “what a system is like.” Here are some possible metaphors (and descriptors) musical and in general of that could align with each tradition.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marching Music, War, Contact Sports, Business / audit cultures, sometimes religious</td>
<td>Classical (esp. Aaron Copland) perhaps Beatles, Motown, Sports – team or Olympics / strategy like chess, Highest Culture, fine dining.</td>
<td>Jazz, Funk, Indie Rock pop culture, sports play or pleasure element, fashion, open ended journeys, synthetic</td>
<td>Rap (HardCore forms), Punk, Pre-Elvis Rock and Roll, War, struggles, social justices</td>
</tr>
<tr>
<td><strong>KEY THINKERS &amp; ORGANIZATIONS RELATED TO TRADITIONS IN THIS INQUIRY</strong></td>
<td>testing organizations and companies + state and national government</td>
<td>John Dewey, Maxine Greene a twist of pedagogue Alfie Kohn</td>
<td>David Buckingham, John Broughton, Ruth Vinz And a twist of John Fiske &amp; Mikhail Bakhtin</td>
</tr>
<tr>
<td></td>
<td>Modernism Epistemological – study or theory on the nature of ground of knowledge esp. regarding its limits and validity</td>
<td>Post-Modernism Ontological – theory about the nature of being or things that have existence</td>
<td>Paulo Freire, Henry Giroux, Stephen Brookfield, Jack Mezirow</td>
</tr>
</tbody>
</table>
Chapter IV
DESIGN AND METHOD

Have you ever been experienced? Well, I have. (Jimi Hendrix, 1967)

Defining Experiential Learning Events

The previous chapters introduced general theories and intellectual traditions around experience and experiential learning. The following attempts to synthesize some of those ideas into a working definition of the type of experiential learning designs that are the focus of this inquiry.

A broad way to think about experiential learning is that it situates learners in culturally organized settings. Ideally, pedagogies (like facilitation, dialogue, co-creation, reflection, provocation in the liberal humanist, cultural studies, or critical pedagogy traditions) help learners move toward states of high EXP and flow as individuals and as a collective.

In literacy education research, we can draw parallels to Shirley Bryce Heath’s (1983) idea of a “literacy event.” Morell (2004) expanded Heath’s concept to include

\[\text{________________________} \]

\[1\] Of course, classrooms are not always in “experiential learning” mode; some direct instruction will likely occur and can be helpful in many situations. Sometimes explaining or clarifying a task, concept or content is essential while other times uncovering these things can be more beneficial. These decisions are often framed in the context of the instructional time available to educators. Educators can also make experiential pedagogies highlights, peaks or focal points for of any given course of study. Designing school experiences for connectivity and intersubjectivity hold out the possibility of making learning toward richer, multi-dimensional, personalized and communal acts.
non-print literacies, describing these events as “a communicative act in which any text is integration to the nature of participants’ interactions and interpretive processes” (p. 11). While the idea of text has print-centered connotations, it can be read to include the visual, auditory, and kinesthetic (and perhaps olfactory, and gustatory as well).

If experiential learning events (ELEs) are viewed from a literacy lens, participants are situated in ways that might allow them to read, write, speak, listen, view, and represent ideas during and after their experience. ELEs are designed to engage with new ways of comprehending, critiquing, and creating the learners’ worlds.

The experiential learning events that are the subject of this inquiry were aspirational in design. Their aspiration was to allow learners to:

- develop new literacies in novel, different, and unique contexts—usually cultural formations that are not easily accessed by students or teachers
- connect to Fenwick’s five dimensions of experience between the liberal and cultural studies part of the spectrum
- experience higher stages of the EXP scale and states of flow
- combine a rich experience (the mountain) with facilitated reflections (moderation)
- uncover unexpected ideas, learnings, projects, questions, partners, actions, or outcomes.

Building on these intentions, ELEs can be defined as communicative acts (pedagogies) that connect learners to cultural formations using challenge, choice, inquiry, provocation, intersubjectivity (multiple points-of-view), and reflection, with the goal of expanding understandings and abilities.

Of course, as the old Robert Burns (1785) quote (in modern English) reminds us, “the best laid plans of mice and men oft go awry.” Regardless of my intentions as an educator and ELE designer, this study does not assume any of these things happened at any site of study. While these assumptions were in play at the outset of each experience,
the goal of this inquiry was to uncover some shapes, textures, and key qualities of three specific ELEs.

Two Kinds of ELEs

Understanding the three sites of study requires a critical distinction\(^2\) between an uppercase use of Experiential Learning Events (all caps) and its lower-case counterpart. This distinction is designed to differentiate experiential learning events on the basis of their location inside or outside of a formal school setting.

**Uppercase Experiential Learning Events (ELEs)** combine the spirit of traditional field trips and outdoor education. As such, ELEs involve movement beyond the classroom. Learners have direct contact with out-of-school environments, their inhabitants,\(^3\) and their related cultural formations, usually around an expansive disciplinary focus. This is common in many CS approaches to education (Frymer, Carlin, \& Broughton, 2011) and informal learning traditions (Brody, 2005).

**Lowercase experiential learning events (eles)** bring artifacts, ideas, and resources related to outside-of-school cultural formations into classrooms or study cultural formations in schools. Lowercase learning experiences might utilize cultural (especially popular or common) artifacts in class, invite artists or other professionals to classes (face-to-face or virtually), and explore the school environment. They may use analog and digital tools to facilitate connections to other people, places and things.

\(^2\)Outdoor classrooms linked to public schools are rare, but they certainly problematize these distinctions. Because these schools are designed as an alternative to standard ideas of schools and schooling, their focus would likely be (caps) Experiential Learning, but that would be another line of inquiry.

\(^3\)“Inhabitant” is an intentional choice here to include a variety of living things. One could study flora and fauna as inhabitants of an ecosystem. In the context of PK-12 education, it is more likely that if a class visited a more remote or exotic ecosystem like “a rain forest” or a local park, educators would invite people that work within that ecosystem to guide or interact with students.
As Dewey (1916/1944) states in *Democracy and Education*, “we never educate directly, but indirectly by means of the environment” (p. 19). Both experiential learning environments move away from the “sit and get” modalities commonplace to traditional schooling. The (all caps) ELEs move toward the “explore (see, hear, feel), discuss, uncover and do” mode and move *beyond a formal classroom setting*. ELEs or eles could happen in any of the continuum of pedagogical traditions explored in Chapter IV. The ELEs in this study were designed within the Liberal Humanist and Cultural Studies traditions. This inquiry does assume there would be some transference between the types of experiences one might have between an ELE and ele, but the former is the focus of this inquiry.

**Sites of Study**

The three ELEs selected for this inquiry were all interdisciplinary yet anchored in specific disciplines (English, science and math, respectively). I created or co-created each of the three ELEs (Table 5.1) for secondary public school students or teachers.

By researching ELEs with different disciplinary orientations, it is easier to look at my role as an Experiential Learning designer, “occupied not with subject matter in itself but in its interaction with the [learner’s] present needs and capacities” (Dewey, 1916/1944, p. 183). One need not overemphasize “education as knowing, preferring to view it as a set of potential lines of cultivation, where culture always contains moments of activism and insurgency” (Broughton, 2010, p. 335).

The first ELE took place in 2001. The **Intensive English Seminar (IES): From Fiction to Film** was an English Language Arts class I co-created for 20 high school juniors in my second year teaching high school in Ann Arbor, Michigan. This course was unique because we attempted to design authentic assessments to accompany each unit of study. While some projects did not completely come to fruition, two major projects were
realized. The first was a spring break trip to California where students met with professionals who “turned fiction into film”—this ELE is the focus of the inquiry. The second major project was a large public symposium on genetics and popular culture called “Nice Genes Dr. Frankenstein,” co-produced by students and built around the novel *Frankenstein*.

The second ELE took place in 2014. **The NASA + Real World Matters Climate Change in the Classroom Workshop (CCIC)** was a one-day ELE co-created with a team from NASA’s Goddard Institute for Space Studies in New York. In preparation for the workshop, I worked with a NASA scientist and educational coordinator to develop a climate change curriculum that embraced the use of media and popular culture. The anchor discipline for this work was science, but many disciplines and media texts allowed for teachers of all subject areas to participate in the event. Thirty teachers from across the United States attended the event and collaborated with an interdisciplinary team of scientists to reimagine and remix a base curriculum in ways that would be meaningful for their students and classrooms.

The third ELE took place in 2016. I designed **The Glenbard District 87 Mathematical Curiosity Adventure** for 20 teachers from the Chicago suburbs to experience math “in the wild” at the University of Michigan community (including people working in sports, industry, and business). The goal was to create a learning experience where teachers would be exposed to multiple cultures that valued mathematics. The event was designed to explore uses of math beyond a rigid textbook curriculum to help teachers think about ways to redesign their coursework around student interests and existing “math cultures.”
Table 4.1. Sites of Study

<table>
<thead>
<tr>
<th>YEAR &amp; LOCATION</th>
<th>SITE &amp; DISCIPLINARY FOCUS</th>
<th>SHORT DESCRIPTION</th>
<th># OF PARTICIPANTS</th>
<th>EXISTING DATA</th>
<th>DATA TO BE COLLECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2001</strong> &lt;br&gt;Ann Arbor, MI &lt;br&gt;Los Angeles &amp; San Francisco, CA</td>
<td>Intensive English Seminar (IES): Fiction to Film English class &lt;br&gt;English Language Arts</td>
<td>IES was designed for approximately twenty high school juniors in my second-year teaching high school in Ann Arbor, Michigan. This course attempted to design authentic assessments to accompany each unit of study. Two major projects were realized. The first major project was a spring break trip to California where students met with professionals who “turned fiction into film” – this ELE is the focus of the inquiry. The second major project was a large public symposium on genetics and popular culture co-produced by students and built around the novel <em>Frankenstein</em>.</td>
<td>2 teachers &lt;br&gt;20 tenth grade high school English students &lt;br&gt;=13 guest speakers / collaborators</td>
<td>• (Some) student journals &lt;br&gt;• Field notes / journals &lt;br&gt;• Personal communications &lt;br&gt;• Archived video &lt;br&gt;• Still photography</td>
<td>• Questionnaires with all available participants &lt;br&gt;• In depth interviews with at least 2 select participants</td>
</tr>
<tr>
<td><strong>2014</strong> &lt;br&gt;New York, NY</td>
<td>NASA + Real World Matters Climate Change in the Classroom Workshop (NASA-CCIC) &lt;br&gt;Science</td>
<td>The NASA-CCIC was designed with a team from NASA’s Goddard Institute for Space Studies in New York. I worked with a NASA scientist and educational coordinator to develop climate change curriculum that embraced the use of media and popular culture. Thirty teachers from across the United States attended the event and collaborated with an interdisciplinary team of scientists to reimagine and remix a base curriculum in ways that would be meaningful for their students and classrooms.</td>
<td>3 teachers &lt;br&gt;30 adult learners – mostly secondary science teachers although other disciplines were present &lt;br&gt;=12 guest speakers / collaborators</td>
<td>• Some projects created by participants &lt;br&gt;• Field notes / journals &lt;br&gt;• some Communications &lt;br&gt;• Archived video &lt;br&gt;• post-event surveys</td>
<td>• questionnaires with all available participants &lt;br&gt;• in depth interviews with at least 2 select participants</td>
</tr>
<tr>
<td>YEAR &amp; LOCATION</td>
<td>SITE &amp; DISCIPLINARY FOCUS</td>
<td>SHORT DESCRIPTION</td>
<td># OF PARTICIPANTS</td>
<td>EXISTING DATA</td>
<td>DATA TO BE COLLECTED</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------</td>
<td>-------------------</td>
<td>------------------</td>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>2016 Ann Arbor, MI &amp; Glen Ellyn, IL</td>
<td>The Glenbard District 87 Mathematical Curiosity Adventure A2MCA Math</td>
<td>This A2MCA was designed for twenty teachers from the Chicago suburbs to experience math “in the wild” at the University of Michigan community (including people working in sports, industry and business). The goal was to create a learning experience where teachers would be exposed to multiple cultures that valued mathematics. The event was designed to explore uses of math beyond a rigid textbook curriculum to help teachers think about ways to redesign their coursework around student-interests and existing “math cultures.”</td>
<td>1 teacher 20 adult learners - secondary math teachers ≈13 guest speakers / collaborators</td>
<td>• Some projects created by participants • Field notes / journals • some Communications • Archived video • some pre- and post-event surveys</td>
<td>• questionnaires with all available participants • in depth interviews with at least 2 select participants</td>
</tr>
</tbody>
</table>
As a practicing educator in these three settings, the theoretical frameworks for each event are not something I discussed deeply with participants. Broadly speaking, the design of these three sites straddled spaces between the liberal and CS traditions. This inquiry itself will help uncover the best description/orientation through the questionnaires and interviews. For now, there were two clear purposes that cut across all three ELEs.

In addition to the qualities of ELEs listed previously, the primary purpose of each event was to immerse learners in new cultural formations that would, as broadly defined earlier, “expand [learners’] understandings and abilities” in relation to a broadly conceived discipline of study. This purpose was clearly articulated to learners, funders, and/or administrators. While each event had different levels of front-end articulation (see Figures 4.1, 4.2, and 4.3 pulled from ELE documentation), the broad ELE goals capture the general themes. This purpose falls somewhere between the liberal humanist tradition and CS tradition. Some examples of this can be seen in the purpose of each event (see Table 3.3). Each ELE was designed for learners to make progress toward their better selves (liberal-humanist) but also designed for the creation of personal and cultural meanings (CS). Sometimes the teacher worked as a coach/gatekeeper (liberal-humanist), but other times was simply a curator and connector (CS) in each ELE space.

The secondary purpose was built around an opposition to what Michael Apple (2014) terms “official knowledge”- or at least a desire to re-think and re-contextualize, or expand the knowledge valued in school settings. The secondary purpose was discussed with learners as issues of power and authority arose and was informally mentioned in communications—though usually as subtext (see Figure 4.3). The focus on popular cultural formations (Hollywood, sports, technology, and arguably NASA) and the possibility of counter-hegemonic formations in relation to schooling align the work with the implicitly political project of cultural studies in schools.
Like the traditional AC Lit course, students will be exposed to a diverse range of British and American Literature. Each unit will examine the text in its cultural milieu and make connections to the local, national and global communities of the past and present. Students will search for thematic connections in the world around them. The course objectives are to increase creative and critical thinking skills, teach real world business skills, improve both formal and informal writing, understand vocabulary that is culturally significant, and gain knowledge of literary and film terms that are all in sync with the standards set forth by the National Council for Teachers of English. A multiple intelligence approach will be used to focus on the individual student's needs for success in relation to these goals. We are looking to make connections, once again, so what is learned is real and useful.

**COURSE OBJECTIVES:**

- Keep students’ individual needs as a primary focus
- Improve critical and creative thinking skills
- Improve formal writing and analysis skills
- Learn about the relationship between literature and film
- Make the connections between the film, the literary business world and the classroom
- Create visual awareness and understanding of film
- Build the comparisons between film and fiction to dialog and write about them
- Encourage the ability to discuss intelligently in a classroom setting
- Incorporate a service learning component (the writing lab) to encourage sharing of knowledge which empowers students
- Work and relate in groups

Figure 4.1. IES Course Proposal Overview and Objectives (from 2001 course documentations)
CCIC offers teachers a unique professional setting to work collaboratively with their peers and practicing scientists on designing lessons for teaching students about climate change, helping them meet educational standards and providing them with quality, authentic problem-based learning experiences. The workshop is organized into the following four sessions described below where teachers work individually, with a team and in targeted sessions with scientists to Explore, Evolve, Enhance, Elaborate and Evaluate a Hot lesson that they customize for their students. These new lessons are specially designed by teachers to meet the needs of their students, school curriculum goals, the Common Core State Standards (CCSS) and Next Generation Education Standards (NGSS). Each session is designed to develop deeper understandings of climate change while providing teaching strategies and tools for involving students in PBL, collaborative learning and critical thinking.

**Explore:** Teachers will explore key science ideas underlying the topic of climate change and scientific practices with NASA and Columbia University scientists after screening a clip from Showtime’s television series on climate change – Years of Living Dangerously. This discussion provides climate change background for an in-depth review of teachers’ pre-selected Hot lesson.

**Evolve:** Teachers will brainstorm ways to evolve their Hot lesson to use back at school to help students develop 21st skills, climate science understandings and address national education standards.

**Enhance:** Teachers will work with scientists to further develop their knowledge about the climate change topics addressed in their Hot lesson and to enhance and customize the lesson with problems, data, and student performance tasks that work for individual classes / teachers.

**Elaborate:** Teachers will draw on ideas: plans and other content from the day to prepare a summary of the lesson plan they customized for school. They will prepare a 2-minute presentation of their lesson plan for scientist and peer review in the culminating session.

**Evaluate:** Teachers will take turns in the “Hot” Seat to provide a 2-minute presentation of lesson plans for scientist and peer review to receive feedback for improving on the lesson they plan to use back at school.

**Learning Objectives**

Teachers will be able to:

1. develop understandings of some of the basic ideas and science surrounding the topic of climate change by using diverse media and through collaborative discussions with NASA and Columbia University climate scientists
2. make connections between existing curriculum, climate change and the Common Core State Standards and the Next Generation Science Standards
3. gain professional experience, teacher and expert relationships, and customized Hot lessons for teaching students about climate change and developing their problem-solving abilities and other 21st Century skills.
Each ELE had formal and informal expectations that learners would use the ideas, cultural practices, and formations they experienced as springboards of possibility for their teaching and/or learning after participation. Artifacts like journals, videos, and survey data exist from each event. These artifacts reflected on the experience in the moment, not its long-term effects or the types of insights and challenges they created for students and teachers. Specific educational learning outcomes were articulated for each ELE but not measured for any of the ELEs. Follow-ups on people’s work were not always possible directly after each experience. Curiosity about what happened for ELE participants beyond surface observations made by the instructors drove this ex-post facto inquiry.

Participants in the three ELEs in this inquiry are adults. The exception to this is that the Fiction to Film course occurred when participants were adolescents.

For the Intensive English Seminar ELE, students did a massive array of work, but expectations were deeply differentiated based on student interest, need, and ability. In some ways the Los Angeles/San Francisco trip was an “outcome” of the students co-planning that ELE. Had this project been done later in my career, I would have helped students collect their artifacts in a portfolio more carefully.

The NASA and Ann Arbor events were designed to help K-12 educators begin to reimagine their lessons, practices, or classrooms in ways they thought would be more meaningful or engaging for students based on what they uncovered during their ELE. The NASA ELE was framed by some broad parameters—paraphrasing, “work with scientists to build on these lessons we created in ways that interest you/or would engage your students.” The Ann Arbor trip was very open-ended: “use this experience as a springboard to new ways of exploring math in your classes.” For the two adult learning experiences, there was documentation of the projects people decided to undertake. Outside of some existing follow-ups immediately after the events, data collection for this inquiry was designed to see how generative the ELEs were in the long term.
Site Collaborators

Each ELE was done in collaboration with a wide array of individual and organizational partners in multiple cultural formations to foster intersubjectivity and multiple points-of-view (see Table 4.2). All the partners worked broadly within the disciplinary framework that was the anchor for the ELE, but there was significant variation around each focus.

Table 4.2. Individual and Organizational Partners (in their roles at the time of the ELE)

<table>
<thead>
<tr>
<th>2001: INTENSIVE ENGLISH SEMINAR (IES): FICTION TO FILM ENGLISH CLASS—English Language Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Co-planner Jennifer Boylan, English teacher at Huron High School - Ann Arbor, MI</td>
</tr>
<tr>
<td>• Dan Rabinow - literary agent at Creative Arts Agency</td>
</tr>
<tr>
<td>• Philip Stark - screenwriter Dude, Where’s My Car &amp; That 70s Show</td>
</tr>
<tr>
<td>• Camran Shaffi - literary assistant United Talent Agency</td>
</tr>
<tr>
<td>• University of California Los Angeles School of TV, Radio &amp; Film — Hal Ackerman author and professor of screenwriting. • Paramount Studios in Hollywood – we were given a studio tour and we saw a taping of the Christine Taylor pilot True Love.</td>
</tr>
<tr>
<td>• Robin Williams actor, comic</td>
</tr>
<tr>
<td>• Zoetrope Studios in San Francisco • Warner Brothers Studios in Burbank • Spike Jonze director of Being John Malkovich and Adaptation</td>
</tr>
<tr>
<td>• Dreamworks Animation and lead animator Frank Gladstone</td>
</tr>
<tr>
<td>• Scott Frank screenwriter Get Shorty &amp; The Minority Report</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2014: NASA + REAL WORLD MATTERS CLIMATE CHANGE IN THE CLASSROOM WORKSHOP—Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Co-planner Carolyn Harris education coordinator at NASA-GISS and founder of Real World Matters</td>
</tr>
<tr>
<td>• Co-planner Dr. Pushker Kharecha Associate Research Scientist at the Columbia University Earth Institute’s Center for Climate Systems Research (CCSR)</td>
</tr>
<tr>
<td>• Dr. Dorothy Petet Senior Research Scientist @ NASA-GISS specializing in Paleovegetation and paleoclimate, Carbon Cycle, Peatlands, Climate Change, Human Impacts</td>
</tr>
<tr>
<td>• Dr. Barbara Carlson Aerospace Technologist @ NASA-GISS</td>
</tr>
<tr>
<td>• Dr. George Tselioudis Research Scientist @ NASA-GISS specializing Earth Sciences and remote systems</td>
</tr>
<tr>
<td>• Dr. Alex Ruane is a Research Physical Scientist at the NASA Goddard Institute for Space Studies and an adjunct Associate Research Scientist at the Columbia University Center for Climate Systems Research</td>
</tr>
<tr>
<td>• Dr. Tim Hall Senior Scientist, at NASA-GISS, and Adjunct Professor, Department of Applied Physics and Applied Mathematics, Columbia University</td>
</tr>
<tr>
<td>• Dr. Radley Horton is a Lamont Associate Research Professor at Columbia University’s Lamont-Doherty Earth Observatory. His research focuses on climate extremes, tail risks, climate impacts, and adaptation.</td>
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</tbody>
</table>
Table 4.2 (continued)

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<thead>
<tr>
<th>2014: NASA + REAL WORLD MATTERS CLIMATE CHANGE IN THE CLASSROOM WORKSHOP—Science (cont.)</th>
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<tbody>
<tr>
<td>• <strong>Dr. Gavin A. Schmidt</strong> is a climatologist, climate modeler and Director of the NASA-GISS in New York, and co-founder of the award-winning climate science blog RealClimate.</td>
</tr>
<tr>
<td>• <strong>Dr. Ron L. Miller</strong> is a physical scientist at the NASA-GISS and Adjunct Professor. Applied Mathematics: Atmospheric Science at Columbia University</td>
</tr>
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<tr>
<th>2016: THE GLENBARD DISTRICT 87 MATHEMATICAL CURIOSITY ADVENTURE—Math</th>
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<tr>
<td>• <strong>Dr. Carol A. C. Flannagan</strong> interim director of the University of Michigan Transportation Research Institute (UMTRI), associate research scientist in UMTRI Biosciences Group, and research director of Center for the Management of Information for Safe and Sustainable Transportation (CMISST)</td>
</tr>
<tr>
<td>• <strong>M-City</strong> – driverless car test city tour and visit with additional UMTRI researchers.</td>
</tr>
<tr>
<td>• <strong>Olivia Walsh</strong> Ph.D Candidate in Applied and Interdisciplinary Mathematics named “America’s Next Great Cartoonist” by <em>The Washington Post</em> in 2010.</td>
</tr>
<tr>
<td>• <strong>Ali Z. Hussain</strong> Ph.D Candidate in Islamic Studies in the department of Near Eastern Studies and Huffington Post blogger</td>
</tr>
<tr>
<td>• <strong>Chiedozie Eric Oakfor</strong> MBA candidate in the Stephen M. Ross School of Business and MA Candidate in Higher Education at the School of Education</td>
</tr>
<tr>
<td>• <strong>Dr. Patricio Guillermo Herbst</strong> Professor; Chair, Educational Studies; Professor, Department of Mathematics, College of Literature, Science, and the Arts</td>
</tr>
<tr>
<td>• <strong>University of Michigan Men’s Basketball &amp; Pete Kahler</strong> Director of Basketball Operations &amp; graduate student data team</td>
</tr>
<tr>
<td>• <strong>Dr. Scott E. Page</strong> Professor of Complex Systems, Political Science, and Economics author of <em>The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies</em></td>
</tr>
<tr>
<td>• <strong>Dr. Bhramar Mukherjee</strong> is the associate director for population science research at The University of Michigan Comprehensive Cancer Center and Professor in the Department of Biostatistics</td>
</tr>
<tr>
<td>• <strong>Menlo Innovations</strong> (software design firm) &amp; CEO / Chief Storyteller <strong>Richard Sheridan</strong>, author of <em>Joy Inc.</em></td>
</tr>
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**Site Similarities and Differences**

Although I have participated in the design of many smaller ELEs and eles, these sites of study were chosen for two main reasons. First, I had access to a majority of the participants via e-mail. Second, the common features of these ELEs were intellectually intriguing in relation to the different disciplinary foci and participants. Each learning site:

- included 20-30 learners and approximately 13 individual and/or organizational partners
required significant additional funding outside of normal K-12 budgets for the travel

accessed novel cultural formations (Hollywood, NASA, and a major research university community including multiple unique formations—NCAA basketball, the auto industry and a Silicon Valley-style tech company) that are not usually accessed by educators

utilized a wide variety of texts (images, sounds, places, people, print, etc.) to support content

valued “the possible” around learners’ interests, curiosities, and passions about what learners might use their experiences for in the present and the future

allowed participants to choose to participate—these were all elective events linked to established K-12 school systems

was open to learners engaging in ways that interested them in relation to what they experienced after each ELE

Differences may also be revealing. Each learning experience had different populations of learners, different disciplinary foci, and unique institutional constraints. While the first site occurred over ten years before the other two, its shortcomings and successes drove much of my thinking about improving the creation and design of the later ELEs.

Narrative and Metaphorical Ways of Knowing

*Stories matter. Many stories matter. Stories have been used to dispossess and to malign, but stories can also be used to empower and to humanize.* (Chimamanda Ngozi Adichie, 2009)

Vinz’s narrative methodologies, coupled with Janet Emig’s (1983) framework for teacher-inquiry, and Nash’s (2004) articulation of Scholarly Personal Narrative (SPN) articulate a wide angle lens for this work. Emig felt the term “research” was often
mistaken for a totalizing whole. She felt the word inquiry has “connotations [that] are less parochial and more generous” (p. 159). As such, there has been an effort to replace the common term “research” with “inquiry” where possible. Emig’s essay, “Inquiry Paradigms and Writing,” highlights six characteristics that need to be present for educators working within a teacher-inquiry paradigm. Here, they are paraphrased by Goswami, Lewis, Rutherford, and Waff (2009):

- A governing gaze—how and why do we see and perceive what we see?
- An acknowledged, or at least conscious, set of assumptions—the things we believe to be true.
- A coherent theory or theories—in other words, the strong reasons, hopefully based on good research that inform our practice.
- An allegiance to an explicit or at least a tacit intellectual tradition that asks us to consider, to borrow from Jackie Royster (2000) “whose company are we keeping?”
- An adequate methodology—how you conduct your research in your educational setting.
- An indigenous logic consonant with all of the above. (p. 6)

Adding to Emig’s framework, Vinz (1996a) suggests at least three reasons for teacher inquiry and reflection: (1) searching for self-understanding, (2) reconceptualizing curriculum, and (3) considering the relationships between theory and practice. One hopes studying these ELEs can illuminate my own thinking about Experiential Learning Events while revealing pitfalls and possibilities that teachers, administrators, and policymakers can contemplate should they find value in attempting more experiential learning in their schools.

At the moment, these ELEs are just that—events. I have some objective and subjective interpretations based on my experience and some existing data. The inquiry is designed to probe more deeply and systemically to look at what did and didn’t work for learners in the hope that “the truth of the examined narrative will always be complicated, compromised, and uncertain” (Fulwiler, 1997, p. 97). As Chimamanda Ngozi Adichie (2009) reminds us, there is “a danger in a single story,” and using Vinz and Emig presents a map for the construction of a layered narrative.
What follows elaborates on each element of Emig’s inquiry paradigms as it relates to this study.

**Governing Gaze**

This inquiry explores the multiple subjectivities related to educational phenomena, i.e., multiple ELEs rooted in personal experience. This framework assumes: “Since reality is knowable in an infinite number of ways, many equally valid descriptions are possible. The choice among them depends on the purposes of the investigator and the focus of the investigation” (Mishler, 1979, p. 10).

Chapter I of the inquiry’s introduction situates me and this inquiry in multiple locations: parent, educator, past worker in the culture industries. As mentioned in Chapter IV, I am working between the theoretical and intellectual traditions of liberal humanism and cultural studies in education.

The introduction did not mention my background working in the film and music business. This experience in the culture industries has afforded me better understandings of the problematic and the possible as related to pop and common cultures. This is a likely reason I am attuned to the educational potential of linking popular and educational cultures. My initial work with pop culture expanded to connecting a variety of different cultural formations (like those in academic and business settings) to teacher development and school curricula.

For this inquiry, I am shifting from the role of an educator designing ELEs to the role of a researcher in the academy. I will use Vinz and Emig’s ideas to guide my sense-making. The inquiry parameters are framed below through Emig’s criteria for teacher-inquiry.

Even taking into consideration the research frameworks for first-person and narrative inquiry, my positionality in this study can be seen as problematic. I am a
designer of the ELEs, a participant, and the researcher. The first-person nature of this exploration raises questions of power and positionality. For the IES ELE, I spoke to former students (seventeen years after the event). Since they know I’m working on a dissertation, they might want to please me or help me succeed because of our previous relationship. To assume that their interview responses simply reveal reality would be naïve. Participants' answers were earnest, but my position as former teacher may have a residual power dynamic lingering in the background.

I support—but don’t have any formal role in evaluating—the teachers in my district that participated in the NASA and A2MCA ELEs. Despite a (perhaps futile) effort to decouple this inquiry process from my day job, they might perceive me as a supervisor because of my positionality at the central office. How might their responses have changed if a more neutral or clinical researcher had asked them the same questions?

Issues of power manifest themselves in different ways during the interviews. With the IES ELE interviews, my power to guide or (in one dramatic case) shut down student agency was discussed in all the interviews. In the teacher ELE interviews, my power was more subtextual, although because many of these teachers see me as a ally in the central office, they would often talk about our school system in ways that might have been designed to nudge me toward having a discussion with our administrative team about the challenges of said system.

To mitigate some of these issues of position and power, I tried to select a range of participants with diverse questionnaire responses. I interviewed one person from each ELE that appeared (based on their initial responses) to suggest a high EXP stage. The other six were chosen because I had some distance from them. By way of example, I had not spoken to two of the three IES participants face to face or on the phone (outside of the occasional Facebook interaction) since their senior years of high school, almost 16 years prior. For the teacher ELEs, I did not select any participants I work with on a regular basis in my school district. I bump into the teacher ELE participants two or three times
during a school year and have not interacted with them on an instructional project since their ELE.

Beyond these issues of power and position, recent psychological research posits that the peak end rule must be considered when dealing with memory. This rule states that experiences are recalled most often by the best or worst moments (the peak) and its ending (Heath & Heath, 2017). When asking people “what an experience was like,” they are likely accessing and assessing their emotional and logical responses about experience into a unifying whole that may focus on the peaks and endings. While use of metaphor allows for a unifying moment, the metaphors do not capture time and space as well as they suggest a “felt sense” or gestalt of the event. Interviewees may not have focused on the challenges in between. For this reason, some of the semi-structured interview questions were designed to focus on and draw out challenges from participants and shift focus to the time, space, and rhythms of the ELEs.

**Working Assumptions**

The following assumptions are formative in relation to the larger inquiry, but subject to inquiry and interrogation moving forward.

The first assumption is that Experiential Learning (caps intentional) is similar to and, in many cases, an amplification of what happens during (lowercase) experiential learning. While the travel element makes the sites of study in this inquiry unique, some of the findings may be applicable to more experiential learning that is more classroom-based.

The second assumption is that the cultural formations related to secondary students and teachers are often deeply limited by technocratic school cultures. In relation to school policymakers and administrators, students and teachers are often perceived as lower status and subject to easy manipulation through a wide range of instrumental teaching,
assessment, and evaluation practices. ELEs question the value of the “effect-size” and “research-based” pedagogies valued by positivist educational paradigms. Within the context of this assumption, there are myriad ways to “do school” that go beyond the normalized cultural formations in schools. ELEs are designed to help learners explore new perspectives and ways they might think, do, and be in relation to traditional schooling.

Third, in opposition of the aforementioned paradigms, each ELE was designed to embrace differences while also finding ways to be inclusive through differentiation and collaboration. Each experiential learning group was composed of different individuals with differing interests and needs. As mentioned in Chapter V, one hopes ELEs would increases one’s individual and collective ability to “look through a wider and more diverse perspective at the lived world” (Greene, 1982, p. 329) and/or to enact personal, educational, social, and cultural changes. Opening up these types of possibilities for new ways of thinking, being, and doing was a goal of each ELE. Further inquiry may find this to be the case; for example, it may uncover that learners become separated from their individual and collective agency in novel ways.

Fourth, to do schooling “with” learners instead of “to” learners (see Kirkland), I am suggesting that ELEs (and their lower-case equivalent) are a strong option for teaching and learning. A deeper probe of this fourth assumption may be challenged, or at least problematized. Ultimately, my inquiry hopes to give readers “a feel for what happens” during an ELE and does not anticipate any easy or grand generalizations. There is a curiosity to whether or not perceptions will align with the theories of experience outlined in Chapter III and the intellectual traditions mentioned in Chapter IV, and if so, how.

A fifth assumption is that ELEs may not always be practical, but (lower case) experiential learning events are always possible. Teachers generally do not have the real or perceived freedoms or the planning time necessary to enact more experiential pedagogies. On the other hand, there are many ways for educators to reprioritize and
reclaim some time and energy to open schools up to student interests, needs, bigger questions, and broader cultures.

Last, I’m not using a singular definition of culture or have any concern about “high” or “low” culture. Cultural studies views cultural formations as both situational and, at times, transitory. Although there are many conceptions of culture, Broughton’s (2010) idea of “culture as a volatile field of creative formation and transformation rather than a heritage of entrenched traditions” (p. 331) is a strong working definition for this study. In addition to the possibilities that might be afforded by accessing a particular cultural formation, new cultures might be formed within any given ELE. Understanding cultural formations located outside schools allows one to enter the

“Gramscian insistence” … that we make culture and we are made by culture; there is agency and there is structure. It is not enough to celebrate agency; nor is it enough to detail the structure(s) of power—we must always keep in mind the dialectical play between resistance and incorporation. (Storey, 1996, p. 11)

Coherent Theories and Intellectual Traditions

Chapter I’s brief overview of metaphor theory, Chapter III’s theories of experience, and Chapter IV’s overview of Experiential Learning traditions allow the inquiry to conceptualize a range of possibilities. These theories and traditions allow ELEs to be explored in multiple dimensions. Metaphor and narratives allow experiences to be probed using Gendlin’s EXP scale, Csikszentmihalyi’s Flow, and the pedagogical continuum framed by Fenwick’s dimensions of experience. Each theory and tradition is a lens that allows us to re-see, rethink, and reevaluate the ELEs.
An Adequate Methodology and Research Questions

Any long-term effects are largely speculative without further inquiry. As noted by Bloomberg and Volpe (2016), narrative research is guided by themes, uncertainties, and tensions. During each experience, preliminary tensions between what is expected by school cultures and what these learning experiences assume is possible in classrooms are anecdotally known to exist and corroborated by some existing data sources (see Table 5.1).

Reflecting on the theories related to these sites of study, a central research question emerged: What happens during and after Experiential Learning events? Specifically, What did people perceive as happening? How did it happen? For whom? Why? These questions can be explored through participants’ descriptions as part of larger ELE narratives to find out what is “striking, noticeable and relevant” (Schaafsma & Vinz, 2011, p. 79) around the phenomena under study. The present inquiry plan contains six steps.

**Step 1. Preliminary Data Review**

A preliminary review was conducted around existing field notes and artifacts to explore for themes, patterns, and significant moments that are “striking, noticeable and relevant” (Schaafsma & Vinz, 2011, p. 79) around the phenomena under study.

**Step 2. Questionnaire**

Stephen Brookfield’s (1995) Classroom Critical Incident Questionnaire (CIQ) has been used and researched in a variety of settings (Glowacki-Dudka & Barnett, 2007; Phelan, 2012). A slightly modified version of the CIQ—the Experiential Learning Event Critical Incident Questionnaire (ELE-CIQ)—was sent to all 70 participants in the three ELEs. The instrument is designed to capture both diachronic data and synchronic data (described in Polkinghorne, 1995). Diachronic (through-time) data focus on narratives
that take place over time and how those data impact later events. Synchronic data (in
time) are more about general feelings, beliefs, and perceptions of the participant in
relation to a specific point in time. The ELE-CIQ should surface both types of data
around critical incidents from the ELEs.

Brookfield (1995) explains simply that critical incidents are “vivid happenings that
for some reason people remember as being significant” (p. 114). They allow educators to
read about specific happenings that may reveal patterns and themes. Whereas Brookfield
wrote these for specific class sessions, they are adapted here to the entire learning
experience. The ELE-CIQ was shared digitally with up to three follow-up
communications (if needed) to ensure the maximum response rate. The adapted
questionnaire documented in Appendix A is designed to be as open-ended as possible to
uncover what participants thought was significant in relation to the experiential learning
events.

**Step 3. First Analysis**

Following Carol Feldman, Jerome Bruner (1986) suggested two types of cognition:
the “paradigmatic,” which looks for common elements and the creation of categories, and
the “narrative,” in which a plot is used to create unity around ideas, events, and
happenings. This study took a series of descriptions and short narratives and plotted them
into single narratives for analysis. The task of researchers using narrative analysis is to
“configure data elements into a story that unites and gives meaning to the data as
contributors to a goal or purpose” (Polkinghorne, 1995, p. 15).

Schaafsma and Vinz (2011) also suggest a third possibility that I am calling
narrative exploration. This is storied research where a less linear pastiche or layered
narrative may be uncovered. This study developed along the lines of narrative analysis
and narrative exploration. Responses will be analyzed for themes, patterns, and
significant moments that are “striking, noticeable and relevant” (p. 79). Looking for
moments of salience, incompleteness and emphasis are considered alongside dilemmas, tensions, and conflicting and competing stories (Clandinin, 2013).

Participants’ responses are storied, considered in relation to previous data and field notes. To gain deeper understanding, perceptions, and questions around these learning experiences, the various theoretical lenses and traditions described in Chapters I (metaphor), III (experience), and IV (intellectual traditions) were used “to look around, behind, above, under, to the side of, and to the other potential stories nested inside any one story” (Schaafsma & Vinz, 2011, p. 76). This aligns with Czarniawska’s (2004) use of Paul Hernandi’s (1997) hermeneutic triad to guide one in analyzing narrative.

Table 4.3. Paul Hernandi’s Hermeneutic Triad

<table>
<thead>
<tr>
<th>EXPLICATION</th>
<th>EXPLANATION</th>
<th>EXPLORATION</th>
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<tbody>
<tr>
<td>Standing under Reproduction translation Reconstruction</td>
<td>Standing over Inferential detection Deconstruction</td>
<td>Standing in for Existential enactment Construction</td>
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This triad gives the researchers a frame to consider finding the nested stories that Schaafsma and Vinz (2011) believe are found “under” (explication), “over” (explanation), and “inside” (exploration) a narrative.

**Step 4. Select Interviews—Case Studies**

Case study interviews were conducted with nine participants (three from each ELE). As mentioned in step 2, I tried to mitigate some of my power and positionality by selecting interview subjects with some distance from me and a representation of multiple EXP stages based on their questionnaire responses.

As narrative threads were identified, additional questions included lines of questioning related to the ELEs in relation to metaphors used to describe the ELEs (Chapter I), theories of experience (Chapter III), and intellectual traditions (Chapter IV).
The semi-structured format allowed for follow-up and probing questions to uncover additional data.

The literature review and existing data suggest four strands of effects. Experiential learning can expand sightlines in relation to:

- what individuals can be or do
- understandings of others (individuals, groups, organizations or institutions)
- the content they are studying
- existing belief systems

In addition to these questions from the participants’ points-of-view, the ELE’s design was a part of follow-up questions. Stories and descriptions were often elaborated on with follow-up questions related to Fenwick’s dimensions of experience. These included questions about the ELE’s perceived purpose, interpretation, engagement, self, and context.

**Step 5. Narrative Building and Analysis**

A draft narrative was constructed around each ELE. Interviewees were able read the draft to make sure it was an accurate representation of their ideas and raise any questions or issues that emerged for them in the reading for feedback. Once those narratives were constructed, I looked for patterns and points of convergence as well as “what is unconvincing, uncertain, and perplexing, rendering surprises and serendipities, and of course, disappointments as well” (Kim, 2016, p. 187).

**Step 6. Follow-up Interviews and Narrative Revision**

Based on advisor questions and feedback follow-up, additional interviews were conducted as needed and narrative revised.
Chapter I hopes an indigenous logic evolves from the other characteristics during the recursive process of data analysis modeled in Bloomberg and Volpe (2016), which emphasizes data collection by interviews, explorations of critical incidents, and then informal focus group follow-ups where participants explore and discuss the initial narrative reconstruction of each ELE. For this inquiry, the questionnaire and interviews were the first two phases of this inquiry.


Chapter VII reintroduces some of the metaphor theory developed in Chapter I to explore some of the questionnaire and interview responses around metaphors for ELEs articulated by participants. Questionnaire responses and analysis aided in the selection of the nine interviews that were shaped into narratives for Chapters VIII, IX, and X.

Because each of the ELEs was in the past, narrative research seemed like a logical way to probe each ELE in relation to the research questions. Also because specific variables were not necessarily known, narrative inquiry was a strong methodology to explore open-ended questions about ELEs. Furthermore, the narrative format’s is useful for understanding the ELEs at the heart of this inquiry because its goal is to “create an
evocative portrait of participants through the aesthetic power of literary form” (Saldaña, 2014, p. 128). The ex-post facto nature of this inquiry, reconstructing, deconstructing, and then constructing meanings through narratives as suggested by Czarniawska (2004), was a promising pathway to explore the research question: “What happens during and after experiential learning events?” Specifically, What did people perceive as happening? How did it happen? For whom? Why?
Chapter V
FINDINGS: METAPHOR AND MEANING

*I have had metaphor jump at me, give me a spin, and run me off to do a story.* (Ray Bradbury, 1990, p. 39)

**Common Metaphors for Schooling**

The introduction to this inquiry presented my daughter’s preschool experience in the context of two metaphors: first, the animal husbandry metaphor via “the Kindergarten Roundup”; second, the mechanical metaphor—my daughter complained of being asked to behave “like a robot.” One metaphor was suggested by district administration, the other by a learner.

Metaphors present the possibility of reflecting on experience through what Eisendrath (1971) calls “the unifying moment.” His theory is built on the work of William James and Alfred North Whitehead. He states that

*[the] nature of experience will depend as much on the knower as the things he [or she] experiences. Indeed, the final moment in which the knower and its known unite, they are annihilated, and what emerges as a unique fact in the universe is the knower unifying his [or her] world…. What emerges is the experienced world of that knower.* (pp. 229-230)

In Eisendrath’s view, this moment allows the heart-and-head merge to process the world. Eisendrath says this allows feelings from an event to be processed in relation to a wide range of experiential data. Thus metaphors of experience can become a unifying moment where “the knower and its known unite” (p. 229).
Of course, like the proverbial chicken and egg, one never knows whether the culture (thoughts, actions, behaviors, designs) creates the metaphors or the metaphors create the culture. That said, research suggests a deeply recursive relationship. Using metaphor as a research tool about education allows one to see if ways of doing and being in schools align with what the metaphors suggest about what the larger educational system is like.

David Grove, a counseling psychologist from New Zealand, moves this idea from a unifying moment toward a unifying metaphor. Grove’s practice, now known as the Clean Language technique, was also known as Symbolic Modeling. Clean language is a series of questions stripped of assumptions and metaphors. The theory is that these questions allow therapists, coaches, facilitators, and teachers, and the accompanying metaphors to create a bridge between the conscious and unconscious minds. The metaphors allow people to explore an experience indirectly in order to probe deep into the nature of experience. Clean Language practitioners Wendy Sullivan and Judy Rees (2008) explain the benefits of using metaphor in multiple settings:

- Metaphors condense information, making things more tangible and easier to work with.
- Metaphors can represent experience more fully than abstract concepts and enable more effective communication.
- Metaphors allow us to think in deeper and more profound ways.
- Someone’s metaphor for an experience has a similar structure to the experience that it represents.
- When people experience change, both their metaphor and their life experience generally associated with it change in tandem. (p. 21)

Soliciting metaphor is also a common way to get at “felt sense.” This is a term Gendlin (1978) used in his focusing method to assess people’s therapeutic experience in relation to the EXP scale. Gendlen explains that a felt sense is not an emotion but instead, “something you do not at first recognize—it is vague and murky. It feels meaningful, but not known” (p. 10). Metaphor can help surface this felt sense of an experience into words and ideas.
Metaphors help suggest what a system is like (Lakoff & Johnson, 1983) to those inside it or how those designing an experience might have conceptualized it from the outside. The field of metaphor theory is related to the theory of framing everyday life put forth by Goffman (1974/1986) and, as researched on by Tversky and Kahneman (1986) and others, has developed significantly in the last 30 years. Metaphors can act as frames that shape people’s values, understandings, and behaviors in relation to experience and give a window into how they constitute an experience.

This foundational research on framing has led researchers, writers, and educators to explore metaphorical concepts to unlock deeper, more unconscious understandings of our behaviors in different developmental stages (Schecter & Broughton, 1991) and cultural formations (Feldman, 2008; Geary, 2011; Hofstadter & Sander, 2013; Holyoak & Thagard, 1995; Pugh, Hicks, & Davis, 1997).

Studies have also been done on the effects of metaphor on behavior as they relate to public policy (Kruglanski, Crenshaw, Post, & Victoroff, 2007; Thibodeau & Boroditsky, 2011, 2013), health (Gallagher & Updegraff, 2012; Hauser & Schwarz, 2015; Lane, McLachlan, & Philip, 2013; Scherer, Scherer, & Fagerlin, 2015), our perceptions of genius (Elmore & Luna-Lucero, 2017), and advertising (Ang & Lim, 2006). Given the right circumstances, these studies suggest that metaphorical framing can impact people’s thoughts, actions, and ways of being in the world.

There is also literature on the use of metaphor as a research tool in a variety of settings. This includes things like English as a Foreign Language (EFL) teaching (Xiong, Li, & Qu, 2015) and learning (Akbari, 2013), organizational change (Barner, 2008), and the effectiveness of coaching and mentoring (Britten, 2015). Researchers have used metaphor as a research tool for categorization like Alvesson’s (2003) metaphorical categorization of interview techniques, and there are multiple other uses of metaphor captured in educational research exemplified by Midgley, Trimmer, and Davies’s (2014) collection on the use of metaphor in and of education research.
This literature informed my use of metaphoric language as a research tool and the last question on my Experiential Learning Event Critical Incident Questionnaire (ELE-CIQ): “Please complete this sentence describing the ELE you participated in with one metaphor or simile (like or as). This ELE was like ....” (From a literary point of view, it is worth noting that both metaphor and simile are types of metaphoric language that creates a frame for experience.)

Thirty-nine people from the three ELEs responded to my initial questionnaire (n=39), and 37 answered this question. The responses were a sharp contrast to the common metaphors describing education in general and American schools in particular.

**Business and Economic Metaphors of School**

Business metaphors for American public education can be traced to early advocates of public schools like Thomas Jefferson and Horace Mann (Greene, 2007). Their ideas about schooling as a way to develop “common men” into human capital were informed by industrial, factory metaphors. These instrumental metaphors are still with us today when we talk about “quality metrics for teacher evaluation.” School systems are constantly searching for “efficient” practices where “time spent on task” will “increase the productivity” as it relates to student performance.¹

Hundreds of years later, Paulo Freire (1970/1993) extended these instrumental metaphors with his famous “banking” metaphor of schooling. This frame has accrued interest since he brought it to the public’s attention in the 1970s. Concepts like “human capital” and “transactional knowledge” schooling as a “long term investment” remain common ways to talk about schooling in the present.

¹Of course, short-term performance on a standardized assessment may not equate to long-term learning.
The latest incarnation of the Elementary and Secondary Education Act (ESEA)—now called the Every Student Succeeds Act (ESSA)—evolves the discourse from the instrumental and economic to include the vocational. ESSA focuses on the development of human capital and “career and college readiness standards.” It does not carefully discuss who defines success beyond business and college leaders involved in the creation of said standards. Furthermore, the banking metaphor is not extended to consider what “opportunity costs” might need to be paid for individuals to be “career and college ready” as conceptualized by the law.

Return on investment (ROI) and optional productivity language is a common thread of positivist meta-studies of educational practices turned educational bestsellers. Works like John Hattie’s (2012) Visible Learning for Teachers: Maximizing Impact on Learning and Dean and Marzano’s (2012) Classroom Instruction that Works: Research-Based Strategies for Increasing Student Achievement guide many educators’ individual and organizational “cost/benefit analyses” around ways of being and doing in classrooms. These studies frame the main purpose of teaching as maximizing performance output—defined in these texts as a proxy for learning. This is a noble attempt—inspired by reductionist science—to identify teacher practices with “large returns” measured and compared by their “effect sizes” on student learning. As such, many administrators look to these types of “evidence-based,” “high-leverage” practices as variable-driven panaceas for improving educational short-term student performance.

Information technology is also a pervasive economic force in American life. For that reason, tech metaphors can be an extension of the economic and business frame. Terms like “school 3.0,” “hacking school,” or “rebooting curriculum” are equally

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2For the moment, we can conveniently ignore the fact that leading businesspeople and thinkers realize that automation will render a multitude of jobs obsolete (McChesney, 2016). Furthermore, forward-thinking countries like The Netherlands are already experimenting with basic-income plans (Boffey, 2015) as past universal basic income (U.B.I) experiments are being reexamined and explored across the world (Surowiecki, 2016).
common and usually focused on manageable—if not always binary—inputs and outputs. These economic concepts of schooling remain powerful in educational discourse (Apple, 2014; Harber, 2004; Ravitch, 2013; Russakoff, 2015).

**Military/Police Metaphors**

Military (and prison) metaphors are another common way to think about schools and schooling. The effects of school/military collaboration can be heard in discourse about schools and schooling. Dorn and Johanningermeier (1999) explore a variety of military metaphors for schooling in the late 19th and early 20th century. They conclude, “Guardians of the schools frequently viewed [them] as large organizations, the personnel of which—students and teachers—were imagined as soldiers, enemies or factory workers. However, the exact metaphor has varied” (p. 198). Gato’s (2010) *Weapons of Mass Instruction: A School Teachers Journey through the Dark World of Compulsory Schooling* is a book-sized treatment of this military metaphor as manifest in early 21st century public schooling.

Moving from schools to the national policy front, major US educational legislation often has overt military connotations. The famous Cold War educational report, *Nation at Risk*, written by Reagan’s National Commission on Excellence in Education (1983) suggested to readers, “If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might have viewed it as an act of war” (p. 5). The 2001 rewrite of ESEA, No Child Left Behind (NCLB)

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3These conceptual frames also reflect a concrete history of collaboration between educational institutions and the military. Gerard Giordano’s (2004) history *Wartime Schools: How World War II Changed American Education* explains how alliances between the government, military, and educational institutions redesigned school structures and curricula to support and continually prepare for war. Douglas Noble’s (1991) book, *The Classroom Arsenal*, overlaps with Giordano’s work, detailing ties between military research, information technology, and the American school system.
analogizes low-scoring students to wounded soldiers—a kind of *Black Hawk Down* meets *Saving Private Ryan*. Federally mandated testing is used to withhold funds, punish failing schools, and control curricular content—all elements of the zero tolerance that makes for a generalized state of war (Martin, 2007, p. 18).

Another exemplary blend of the military and economic is the 2007 National Academy of Sciences report *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*.

![Figure 5.1. Cover of Rising Above the Gathering Storm](image)

The report’s dramatic cover features an American flag superimposed over a menacing red sky that fades into deep doomsday violet. The executive summary reminds readers, “This nation must prepare with great urgency to preserve its strategic and economic security” (p. 4).

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*The global financial crisis that shortly followed *Rising Above the Gathering Storm* was not quite anticipated by the report’s authors but does highlight a collective tendency to overlook storms manufactured within our borders. After the Wall Street implosion, some academics suggested that part of the problem is that the “best and brightest” American students (narrowly
Building on this “serve and protect” ethos of public schooling, educators “join the ranks” of public teaching. Educational administrators often refer to teachers’ work “on the frontlines,” “in the trenches,” or “on the ground.” Intense disciplinary conflicts with students who “blow up” often engage in “battles” with educators, parents, and peers. School leadership teams are often “recruited.” Some “veteran” teachers are valorized, while others may no longer be “fit for service.” Different schools or administrative groups in any given district have been referred to by administrators as “different fronts,” each, it is assumed, with different politics and “rules of engagement.”

Educators and students “give it their best shot” as they work to “hit targets,” learning and otherwise. I was recently in a meeting where a middle school leadership team told our high school leadership team: “If you can identify the targets for us, it is our job to shoot for them.” Students, teachers, and administrators can, at times, be heard referring to each other as “good soldiers.” I’ve been told by colleagues on multiple occasions that I should not “want to die on every hill” as a suggestion to help me stop asking questions about practices that might not be too harmful for students.

I have worked in multiple districts where students are enlisted in summer school “boot camps” to build skills. Teachers and even parents can do the same thing if they choose to attend professional development “boot camps” for topics like technology, curriculum writing, or parent orientation.

defined by those at top universities usually in math or science related concentrations) often peruse careers focused on personal gain—like those in the financial sector, instead of those supporting the public good (Sendhil, 2015; Terkel, 2011).

5Tellingly, as it relates to Giroux’s (2016) thesis—and title of his book—that America [is] at War with Itself, these metaphors are pervasive in many private and public-sector discourse around human resource management and “recruitment.”
Most of the previous military concepts are presented with a positive connotation, but a common pejorative military metaphor is “drill and kill”—a more violent cousin of
“sit and get.” This refers to worksheet-based teaching. Notably, the practice takes on a positive connotation when people refer to it as “skill building for academic success.”

The most upsetting turn of phrase I have heard—in an era riddled with unwarranted killings by law enforcement—has been the administrative directive to “police the teachers and curriculum.” Police and prison metaphors are a staple depiction of schools in popular cultures. Eighties films like Ferris Bueller’s Day Off (1986) and The Breakfast Club (1985) are part of a long tradition of films that evoke schools as prisons. Schools in popular culture are often places students are trapped in or trying to break out of.

A recent humorous example of the use of this extended metaphor comes from the best-selling Middle School series for young readers co-written by James Patterson. The first book was adapted into a film in 2016. The trailer for Middle School: The Worst Years of My Life immediately develops its antagonist Principal Dwight as control-obsessed, fixated on the school’s elaborate code of conduct. The young protagonist, Rafe, is caught drawing cartoons. Principal Dwight—offended by these drawings—confiscates them and explains that “creativity has no place in this school … rules are rules.” Immediately following this statement, he throws Rafe’s sketchbook in the garbage. Rafe reacts by rallying the middle schoolers to systematically (and hysterically) break every rule in the code of conduct. After the revolution has taken hold, Rafe’s younger sister reality-checks him, saying, “You’ve been kicked out of two schools; you’re going to end up in a new school called prison.”

Popular young adult books and films like Susan Collins’s Hunger Games trilogy, Veronica Roth’s Divergent trilogy, and Rick Yancey’s The 5th Wave trilogy portray adolescents being formally and informally schooled. Young learners are continually tested and sorted through militarized educational processes. In each of these dystopian novels, learning becomes a life-and-death affair where students battle with their peers.

The Divergent series is set in a dystopian version of Chicago. The author, Veronica Roth, imagines a world sorted into factions—Abnegation (the selfless), Amity (the
peaceful), Candor (the honest), Dauntless (the brave), and Erudite (the intelligent). When young adults turn 16, they are required to take an Aptitude Test that sorts them into factions. Their training—a proxy for schooling—is dictated by the faction they are linked to. Parallels between the fictional aptitude test in the books and the Scholastic Aptitude Test (SAT) are intentional. Roth (2011) states on her blog that she has “always been interested in government systems that stick people in classes or castes (even if I’m also pretty horrified by them) or high school cliques.”

Whether schools are “blowing things up” or “locking them down,” military and police metaphors have been common ways to frame thinking about American education.

Other Schooling Metaphors

Military and business metaphors are hardly the only descriptors of what it is like to be in American school systems. Other oft-heard metaphors include those related to animals and religion. Let’s return to the story about my daughter Téa’s “kindergarten roundup,” a range of zoomorphic ideas where schools are like zoos and students (and sometimes teachers) are compared to animals. Learners can—after all—be “wild.” We’ve all heard teachers (and parents) loudly suggest that students “stop behaving like animals.”

This frame is amplified in canonical secondary school fiction, such as William Golding’s *Lord of the Flies* (1953). This famous novel explores the horrors of men and boys at war, while highlighting the importance of schooling as a civilizing force to help boys develop into men capable of administering the British empire. A touchstone of this metaphor in American popular culture is the famous Sidney Poitier film *Blackboard Jungle* (1955).
Animal metaphors permeate educational habitats. One district leader I worked with often talked about the “care and feeding” of teachers. Another administrator was brainstorming ways to increase collaboration between middle schools and high schools. He talked about how we have to get “all the teachers on the hook” around curricular goals. When I was developing an unusual learning experience that was not receiving unanimous departmental support, a principal explained to me that I was like the “crab trying to get out of the bucket” with my crabby (pun intended) colleagues trying to pull me down.

Religious or missionary metaphors often guide those who have not “seen the light.” Many researchers reflect on the “teacher as savior” metaphor (examples include Brown, 2013; Castro, 2014; Stuart, 2013). Countless times I have heard about students or teachers in crisis who have a “come to Jesus moment.” Many an instructional shift is discussed as a way to “save so many [likely failing or disengaged] learners.”

A less conventional metaphor I encountered mixed zoomorphic and religious imagery. An administrative team was asked to “shepherd the data” so educational leaders could be “good stewards” of student achievement.

There are also medical metaphors that can be found in school. The entire Response to Intervention (RtI) movement is an evidence-based practice where you have tiers of interventions for students that are not making the grade (DuFour, DuFour, Eaker, & Karhanek, 2004; Hierck & Weber, 2013). Zhao (2017) reviews the literature that compels educational research to be more like medical research and then suggests extending the metaphor by reporting side effects after the implementation of [educational] interventions should be considered seriously. Instead of discarding them as unintended consequences or improper implementation, or simply complaints by unhappy parents,

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6I later found out that this was a slightly remixed metaphor from a popular Harvard Business Review article titled “Management Time: Who’s Got the Monkey?” (Oncken & Wass, 1999).
students, or teachers, it is the responsibility of the policy and product developers’ to investigate and respond to such reports. The FDA monitors side effects and recalls products all the time when a product’s risks outweigh benefits. (p. 15)

Most metaphors have some value, and here is where the idea of thinking about educational side-effects is an interesting frame for thought, even if the idea of a student in need of treatment for illness is part of the concept. If we engage students in reading through prescriptive programs that improve their short-term test scores but blunt their enjoyment of reading for a lifetime, this is worth consideration. On the other hand, most medical metaphors assume at best a deficiency in a learner. At worst, they assume the learner has some sort of illness framing. Students are framed as lacking, instead of as humans with boundless potential for change, growth, and surprise.

Clearly, there are many possible metaphors for school—some more dominant in the discourse than others.

**Former Students and Teachers on What School is Like for Most Students**

I asked all nine of the ELE participants I interviewed, first, what they thought schools valued, and then, how they thought a typical student would describe the system at large. The idea here was to see how their impressions would align or not align with the dominant metaphors mentioned above. The former students who participated in the Los Angeles ELE reflected. First George\(^7\) said:

> For me, and I know a lot of other kids, school was like in the movies, you know the prisoner walks through the prison yard. Students are all trapped in this place together and there is constant fear and drama.

Jane answered the “what does the public school system value?” question quickly.

Without prompting, she moved toward a metaphor:

\(^7\)All names of former student and teacher ELE participants are pseudonyms for the remainder of the inquiry. ELE designers/co-teachers and guest participants names are not changed.
I think, looking back, from my personal experience, I felt a little bit like a cow in a herd. Your goal is to do what you needed to do in school to get through. I didn’t, outside of your classes, I didn’t feel like I had a purpose or a role. I was a good student. I think it [high school] was just going through the motions. I don’t know if that was the intention of school, but kind of keep your head down and don’t cause trouble and graduate and be done.

In a lot of classes I didn’t feel like there was opportunity to be more than just a student, or do other things and think outside the box. I played sports and there were some art classes that I got really involved in, but I wasn’t much of the go getter. I think I was in a shell a little bit.

Ali felt that schools really only value grades. When I asked him what metaphor he would use to describe the school system as a whole, he immediately answered:

Plastic flowers. I know this will sound harsh—it looks the part, but it’s dead. There is no spirit inside. There is no real thriving movements—it’s like a body in formaldehyde.

The NASA ELE participants had similar restrictive metaphors. Rachel, a high school science teacher, suggested:

Schools value conformity. The student comes in, conforms to what they’re supposed to be doing, they pass, they take tests and they do the work, they make the grade, and they leave, they exit. It is like a factory.

John, the other high school science teacher, also framed school with an economic lens. When I asked him what he thought schools valued, he responded:

Cynically, I would say; test scores, but I try not to be of the cynical type. Obviously test scores are important, number of students taking AP tests are important, but I think the holistic view of reaching out to those underserved and keeping up the democratic tradition of a public institutional education, often drives my school.

Expanding this idea to a metaphor took some additional thought for John, but he continued:

Maybe public schooling is like a way point, maybe for some people it’s the destination. Public schooling is a tool acquisition activity. Perhaps if people are thinking from a practical sense like, “This is what I need in order to do the next thing in my life, no matter what that is.” I think sometimes it’s narrow and kind of self-centered around their own achievement. It’s like shopping at Home Depot.
Rachel thought that students would rarely “say that [school’s] a place where they’ve had a lot of fun and a lot of engagement.” She thought what schools value varies widely and to some extent I think that they still value good grades, too. Like I feel the emphasis is on that final letter, that final number, that final standard given at the end of the term. The kids who seem to be rewarded most are the kids who have their organizational and functional skills in place. So, kids who put a lot of effort in. Kids who try. Kids who ask questions and kinda advocate for themselves.

In some ways, I would say that schools are kinda like a rock concert where you get excited at the start of the year. Anticipation. Who you’re in class with? What teachers did you get? What are you’re gonna be doing?

But I think that, sometimes, rock concerts that are ugly. You walk away with a headache. I think that’s a lot of our kids. They walk away feeling like it was good. But could’ve been better. Sometimes they’re stuck with that lingering pain that you feel after a concert. That’s how they feel about school. Not every kid. But I think for a good number of them.

Three math teachers who participated in the Ann Arbor Mathematical Curiosity Adventure also communicated what they thought school was like for students. Craig started by thinking about the experience, “I would say that school is for some students a reminder of their deficiencies.” He elaborated:

At some point, you become aware of things that you do not know. Students who haven’t put in the work [when they get their test scores back], it is a constant reminder [of their deficiencies]. It almost feels like walking around with a cavity that hasn’t been filled.

Arguably many of the major metaphors discussed above—the business, military, zoomorphic, and religious metaphors—could be conceptualized in a meta-category of deficiencies or having to do more with less. The data presented as a snapshot of schools in Chapter II align with some of the ideas of deficiency.

Kevin also built up to a metaphor through discussion. He thought students would perceive school as something, “like herding.” Like the fictional students at Hogwarts, kids would know they were being sorted every step of the way. He thought students were
smart; even when tracking is minimized in schools students know where they stand on the academic pecking ladder. His animal herding shifted toward a factory metaphor where, “You’re just trying to get people out to think one way.”

Katherine, suggested that a majority of kids “feel like they’re going through more of an institutionalized system. In the past, the teacher’s differences gave kids [variety] during the day. Now [the school system] is trying to make everything very much the same, in all classes.” She wasn’t sure that a majority of students would have positive things to say. “I’m not sure they would say a jail or a prison, but something like one of those movies, where everybody has to conform and do the same kinds of things.”

Many of these metaphors objectify learners in a process overseen by authority figures. Collectively, these metaphors evoke school as being done to students as opposed to with or for them. These common metaphors suggest experiences at the lower levels of Gendlin’s EXP scale—where the experience is impersonal and detached.

**ELE Metaphors**

It is important to note that many generative, positive, and liberating things happen in schools for many students and teachers on the individual and class level. Unfortunately, one would never get that impression from the menagerie of metaphors related to schooling in the United States.

The metaphors that emerged from the ELE questionnaires were quite different. Of the 38 respondents, 35 responded to this question (see Appendix A). In total, 70 people participated in the ELEs, so these should be seen as “perspectives rather than a population” (Smith, Flowers, & Larkin, 2009, p. 49). Some of the metaphors were mixed—as such, they were coded into multiple categories. Responses fell into five main categories—the more “off the shelf” comparisons seemed to be ELE as journey/voyage (15) and energy sources (14)—although there are unique variations on these themes. The
other three categories were artistic activities (4), cosmic or beyond description (5), vision (3), and a final category of ballistic metaphors (5). The following is a sampler of metaphors in each of the emergent themes.

**ELE as a Journey/Voyage** (15 Responses)

This category included a variety of travel metaphors that spoke to “being in a place.” They might be the most “on the nose” metaphors, since they were comparing the ELE travel/trip with another type of travel, voyage. One imagines that lower case eles might not evoke this metaphor as readily.

- The Intensive English Seminar (IES) was like “an expedition because we were the voyagers on our way to a new adventure, not knowing what was ahead.”
- The NASA Climate Change in the Classroom (NASA-CCIC) was like being a tourist and “seeing a place for the first time because I was trying to take in every part of the experience at once.” This is an example of a metaphor that can be seen as mixed and could also be categorized as a vision metaphor.
- The Ann Arbor Mathematical Curiosity Adventure (A2MCA) was a destination metaphor like “going to Disneyworld because it was exciting, exhausting, and we still talk about it fondly today.”

**ELE as Energy Source** (15 Responses)

This category included **food and drug metaphors**. These metaphors feel the most embodied and quickly evoked the felt sense of “taking something into” the body. Kozak (1992), a psychotherapist, explored metaphors in the context of Gendlin’s ideas of experience and felt sense. He suggested that “metaphors emerge from physical patterns of experience: that is from our having a body that moves, orients, and breathes through time and space in a physical universe” (p. 143). These metaphors were both gastrological (ingesting) and endocrinological (hormonal/chemical) in nature. While there were different ways the experience got into the body, it changed how participants felt.
- IES was like “an exotic fruit you’ve never tried before” because as soon as you taste it you know a completely different flavor.”
- NASA-CCIC was like “a shot of adrenaline” because it broadened my understanding of climate research that continues to trickle down through my courses.”
- The Ann Arbor Mathematical Curiosity Adventure (A2MCA) was like “a really cold glass of water on a very hot day” because it was refreshing to hear and see what others are doing around mathematics.”

**ELE as an Artistic Activity** (4 Responses)

This included metaphors where some sort of artistic process was considered. These metaphors were most common in relation to the Intensive English Seminar ELE. This may have something to do with the fact that ELE was linked to a year of class instruction. During the student’s junior year in high school, more creation (reading, writing, producing film, staging events) was done than in the other ELEs, and the participants were adolescents at a critical time in their identity formation.

- IES was like “memorizing a poem. I don’t necessarily write about that particular poem or spend cocktail hours reciting it … but when I go to … live in this analogy, which is sometimes to write, this poem I have memorized, informs my writing and my living. It’s there with me. The words. The symbols. The cadence.”
- Another person said IES was like “the creative process and one’s journey to God … because it is a constant dance between observing one’s talents and inner art/culture in the mirror of the outside world.” Because this metaphor also referenced higher powers, it was also coded in the “cosmic” category.
**ELE as Cosmic/Spiritual/Ineffable (5 Responses)**

Any metaphor that struggled to describe the ELE or went to more cosmic language fell into this category.

- The Intensive English Seminar was like “**a synchronized flash of brilliant stars across the galaxy**”; we accomplished something which not only would many others not be able to do, but most wouldn’t be able to conceive of the idea in the first place.” Another IES student said IES was “like a time bend. We saw a glimpse of the future, a time after college, when all doors really would be open. Nearly everyone we met had forged a different path. No one’s career was ready made. It was sobering in that respect. While we were there, high school felt distant, past, irrelevant. The future seemed present and full of possibility.”

- The A2MCA was like “**a new beginning** because I was given an opportunity to see math through a different lens. I was stuck in neutral with my wheel spinning. This experience opened my eyes to the type of teacher I NEED to be for the students of today.” There two additional metaphors: “car being stuck in neutral” also made this code into the journey category and the “see through a different lens” also put it in the vision category.

**ELE as Seeing/Vision Metaphors (5 Responses)**

Here learners talked about being able to see and perceive in new ways. Moving from the phenomenological toward the hermeneutic, these metaphors allude to different degrees of learner control. The first example can be interpreted as someone suggesting new glasses, while the second example might be seen as presenting a learner more in control, able to zoom in and out of an image—the learner as camera.

- The A2MCA was like “**trying on glasses (when you needed them but did not think you did)** and seeing so much more clearly than you did before. It was
like the first time I finally started using ‘readers’ for the first time and going, ‘Oh, that is what I have been missing.’”

- Another participant suggested this trip was like Google maps because we were able to see a big picture and then zoom in on a closer picture. By doing this, we were able to see more of a path for people to take. The second example includes multiple metaphors including technology, photography and travel/maps, but the action of zooming is key.

**ELE as Ballistics** (5 Responses)

At first, two metaphors did not fit into any of the dominant categories, as they related to sports and the military. Reexamining other data, these belonged to category of explosive metaphors. The following suggest varying degrees of involvement from learners who were, in some way, “hit” by the learning experience.

- The A2MCA was like “coach Bill Belichick’s game-plan because it was so diversified and unpredictable as to the extraordinary impact that could and would be made at any given moment.”

- The NASA-CCIC was like “general Norman Schwarzkopf’s ‘operation shock and awe’ because it was fast, hard-hitting, and impactful.”

While these metaphors referred more to things in flight, one might also be able to code—specifically a “shot of adrenaline” or a “vitamin booster shot” and “a synchronized flash of brilliant stars across the galaxy”—into this category because of their felt sense of speed and dramatic impact, although further deliberation left them out of this category.

**Metaphor and Meaning**

Broadly speaking, ELE metaphors seem to involve a wide range of experiences ranging from growth to epiphanies. Where a preponderance of common school metaphors
would align with “my cup is half empty,” or “let me tell you right now where you can put your cup!” the ELE metaphors learners used to explain ELEs were more like Psalm 23:5 — “my cup runneth over.” This small metaphor sample makes it clear that ELEs created a different kind of story.
Chapter VI

FINDINGS: THE INTENSIVE ENGLISH SEMINAR

*I don’t know how much value I have in this universe, but I do know that I’ve made a few people happier than they would have been without me, and as long as I know that, I’m as rich as I ever need to be.* (Robin Williams as Mork from Ork, Marshall, McRaven, Glauberg, Scharlach, & Tenowich, 1979)

As an adult, Jane reflected on the Intensive English Seminar (IES): Fiction to Film class.

That was never really even an idea in my head of how this is going to further me for college or anything like that. I don’t think that was really anyone’s purpose, because we didn’t know what this was. We were in it, and even leading up to going to LA, we still didn’t know what that was going to be. I think that was the exciting part of it. It was almost like this club. We were this group of misfits just hanging out and challenging our brains.

IES was a year-long English class for 20 public high school juniors that took place during 2000-2001. I co-taught the class after school and on weekends with my colleague Jen Boylan (now Boylan-Sessa). Many experiential learning events (eles and ELEs) were an important part of the course. One ELE was the organizing force behind the course design, i.e., the idea that students would co-plan a spring break trip to California, where they would learn first-hand about how books are transformed into movies.

The three interviews in this narrative were conducted in 2018, almost 17 years after the ELE. The interviewees are now all in their mid-30s. Jane works as a youth social worker, George is a lawyer, and Malik is a PhD candidate in religious studies. Some video and journals existed from immediately after the event. I only have three of those 2001 journals in my possession now—these are quoted below in italics to differentiate
them from present-day interviews. A majority of this story is told by adults reflecting on their adolescence, their education, and schooling in general.

Each interview began with me asking former students what they thought school systems valued in general. This was followed by asking for a metaphor describing what school was like. As mentioned in Chapter VII, these interviewees thought high-school [in general] was like “being a cow in a herd,” “walking through a prison yard,” and “a plastic flower that looks the part, but it’s dead. There is no spirit inside.”

After discussing Jane’s, George’s, and Malik’s metaphors for schooling, I shared some of the common frames around public education: school as factory, as prison, as warzone, as zoo, etc. I then shared a sampler of the dramatically different metaphors participants used to describe ELEs—specifically those describing the IES students’ ELE. I asked Jane why she and other people might have given such different descriptions of ELEs in relation to school:

> For me, the biggest part of it was how much we were involved with [planning] every step of the way. I remember learning how to use spreadsheet, researching all kinds of random topics, and making phone calls. At one point I think you told me contact Oprah’s company. I was like, “Holy S#*t”—excuse my language—”oh my gosh, Oprah.”

> Looking back, there were other school trips you take, you pay the money, or your parents pay the money, and you go on the trip, everything’s planned out for you. There’s value in those trips, but we had such a crucial role in the planning process from the ground up even though I knew [teachers and some parents] were doing a lot behind the scenes. I remember feeling like I was a part of it all and really growing up—I knew what it was like to make phone calls and ask for things or try to interview people. On the

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1 Jen and I started planning for the trip working with students to query people that starred in some of the books we read. In this case Jane reached out to Oprah because she starred in the film version of Toni Morrison’s novel Beloved. Oprah declined our invitation.

2 Parents, especially one family, were essential in helping students and instructors fund the course and trip. For another major lower case ele linked to the course (the “Nice Genes, Dr. Frankenstein” symposium), one set of parents was critical in the development of the content of course curriculum.
flipside, I even get hung up on. It wasn’t all this sunshine and roses. It was hard work.

George thought one of the things that made the metaphors shift for this ELE in relation to their general school experience was the fact that everybody there, wanted to be there. That’s huge. That doesn’t mean that everybody wanted to be there every single second of every single class that we had. But in general, everybody chose that class. That changes everybody’s attitude. That, in turn, changes the collective attitude of the group. There were other junior English options. You decided to be in IES. When people do that ... even if they get into something that they don’t like and say, “Oh, what did I get myself into?” They’re still going to probably interact in a more positive way because they know that they got themselves into essentially. Choice is important..

Unlike the other ELEs that are the focus of this study, it is more challenging to isolate the story on a single learning event—specifically the California trip—because it was part of a year-long class for juniors. It also built on relationships with students during their sophomore year. All but one of the 20 IES students were in my 10th grade English class during the 1999-2000 school year. Ninth and tenth grade English at this high school was not tracked. For that reason, teachers were able to work with a broad range of learners in these survey courses.

These students (now adults) were in my first classes teaching tenth grade as a full-time high school teacher. District curriculum for this course required instructors to teach two common novels and five-paragraph essay writing. The remainder of the curriculum, including the final exam, was left up to individual teachers.

During that first year, I was learning on the job. A polite description of my classes would have been kinetic and loud. Despite this outward appearance of chaos (and likely some actual chaos), classes were focused on integrating multimodal texts, genres, and experiences into English language arts. This type of pedagogy (linked to the tradition of cultural studies in schools) allowed me to bring my passion for and background in film and music to the classroom. Additionally, my previous teaching experiences had taught me that popular texts suggested by students or brought in by the teacher (even if it was
something that was popular in the past like the Beatles or a film like 1964’s Dr. Strangelove) almost always seemed to engage more students. Past and present popular cultures were often linked to skills that were deemed essential or canonical texts. The emphasis on this class was always on literacies and cultures—not literature.

During Jane’s interview, she recalled a project from her sophomore year where we studied music videos and album covers as a springboard for students to create a CD cover for an imaginary artist. Often, this artist was the student’s musical alter ego. CD cover designs were accompanied by a biography of the artist as a press release. The CD cover design was an exercise in visual literacy, while the bio was a five-paragraph essay in disguise. The project integrated studying images, existing biographies of professional artists, thesis statements, topic sentences, theme, symbolism, grammar (how do you properly write a song title?), and all kinds of skills one might encounter in the usual freshman or sophomore English class. Jane didn’t remember a lot of the people in [the sophomore class], but I remember a lot of the content. I still remember making a CD cover and coming up with songs that describe you. I remember that being so difficult for me. I put so much effort into it, but I remember it being so difficult because I really didn’t know what described me. At 15-years-old, I’m like, “I don’t know.” But I remember to this day how much I loved it. I was so proud of the finished outcome.

In this sophomore English class, I also planned more traditional field trips for students. They were closer to the type described by Jane as “you pay the money, or your parents pay the money, and you go on the trip, everything’s planned out for you.” Two of the 10th grade trips were to the Rock and Roll Hall of Fame and Museum in Cleveland and to Chicago, where they took in art museums, art theatre (The Blue Man Group), and other cultural events.

In addition to this travel, there were authentic assessments—projects that went beyond the classroom walls. We did a unit on the Cold War. For that unit, students collected and edited oral histories of the 1950s and presented at the local public library.
Students also did “Hollywood” adaptations of *A Midsummer Night’s Dream*. Students had to design a high-concept pitch for the scene they chose to take to the big screen. I pretended to be a studio head. I gave a green light to the most feasible ideas as a way to create “production companies.” Students then worked in teams to write, develop, and ultimately produce and perform their Shakespearian screenplay. One adaptation, *A Midsummer Night’s Smackdown*, received local press. Malik was a war refugee who had immigrated to America four years prior to this class. He was a driving force behind *The Smackdown*. In Malik’s memory:

Aside from IES, the only thing during the high school time period that I genuinely cared about was professional wrestling. That was my social life. On Mondays I went home and prepared for three-hours of *WCW Nitro* and then *WWE Raw*. The next day I would go back to school to talk to friends about that. Wrestling was my religion.

My professional wrestling fandom allowed me to have conversations with people about characters and plot lines and story lines and moves and video games that had nothing to do with me. I was learning to communicate in the third person.

I remember students being obsessed with grades and doing AP this and AP that, and it was meaningless to me. I was enjoying professional wrestling. Because you [the teacher] were able to tap into that, it changed everything. Then it was like, “Okay, if you’re able to tap into that, I’ll do it. I’ll learn. I’ll do whatever.”

Malik was the star actor and “idea guy” that led *The Smackdown’s* all-male team to produce and film their adaptation. This all-male group accidently captured the Elizabethan pathos when half the cast appeared in drag. This team went all out with props and costumes and was one of the few that ended up moving beyond the live classroom performance to tape and edit their production.

In general, I felt (although have no way to definitively know) like I had opened doors to learning through popular culture for many students. I recall not wanting the year to end. I was just getting to know the students and how they functioned. A more critical reflection on this moment in my early 20s linked this time to my diagnosis with—and
treatment of—a serious, and often limiting, chronic autoimmune disease. This negative part of my life may have been counterbalanced by the more joyful experience of working with these adolescents. This may have been one more subconscious reason why I wanted to continue building on these relationships; there was more fun to be had.

Armed with some creativity and lots of naiveté, I crafted a course proposal for a fiction-to-film class for these students as juniors. The class built on the type of work I did with tenth graders, some previous educational projects (including a grant-funded educational program with the Motown Museum), and my training in a Deweyan master’s degree program. I remember working with my mom—also an educator—to craft the document in late April/early May.

I proposed a section of junior English where students would study how books are turned into film. Each book would have a large student-led teaching component and project attached to it.³ The class would work together to plan a trip to meet people involved in adapting the books into film in Los Angeles. I used this pitch to secure a verbal commitment from Borders’ (the now defunct national bookstore chain) national headquarters to donate all the books for the class prior to meeting with administration. It was my big bargaining chip.

With the perspective of age, and a deeper understanding of school administration and office politics, I now understand why my kind department chair met my proposal with a smirk and mild laughter. He was a smart and kind man who didn’t say “no” per se. I recall him explaining to me that all new course proposals need to go to the school board. This was a process that could happen in the middle of the year. It is embarrassing to admit now, but I recall not really knowing what a school board did. I thought it was silly that the school board would want to slow this process down.

³This was attempted for every book we read. We collectively realized we only had the energy and resources as a class to focus on a few projects. Sometimes students would lead book discussion groups and activities, but the “big project” had to be shelved or put on ice.
I then remember asking my department chair if there were any work-arounds. He said I might be able to sign students up for independent studies in English, but it would not be something I would be paid for. I also recall talking to the principal. I was oblivious to the political ramifications of offering a very uncommon alternative to the existing junior English courses in a multi-school K-12 district.

To the credit of both my principal and department chair, they didn’t say “no.” This half-permission allowed me to run with the course. I thought I might be able to teach the class during my plan period during the regular school day. I announced the idea to students, asked them to sign up, and told them I would be updating them over the summer. At the time, approximately 45 students expressed interest. By summer’s end, it was clear that was not an option. The class would have to be run after school, on nights and weekends. When that was communicated to students, about 25 promptly said, “Thanks, but no thanks.” At that time, Jen, then a student teacher and master’s degree student, agreed to be the co-teacher, and 20 students were ready to go on the adventure. According to George, they were a diverse bunch.

AP courses self-selected students that are brainiacs or their parents are doctors and they want them to follow in their footsteps. IES was striking to me because its students self-selected from across the academic intensiveness spectrum. There were people in the class that didn’t take all those advanced classes. Didn’t consider themselves to be super smart. But then there were also people that were in say, Calc 3 as a sophomore.

I can say that with uttermost confidence that is something that I never had in another class. The advanced classes I took were the same people. The basic classes that I took were a different group of people. They were totally different. In IES you had some people who liked STEM, you had some people who liked theater, there were a few jocks. There were people from all over the place in the school; academically, socially, you name it.

Jane had a similar assessment:

Going into [IES], I wasn’t friends with these people. I think some people knew each other or they were friends. I know a couple of the guys, they played lacrosse or something. I think what brought us together was this sense of we all wanted to be a part of this, and we all wanted to be
challenged. You had people who were super into tech stuff, then you had people that were on student council, and “popular” groups, and then you had people that were more reserved. It wasn’t a clique having an excuse to just hang out and be friends. Once we got into the setting, we were peers, we were equals, but then outside of those walls, we just did our own thing.

We didn’t choose to be in the class because it was popular, or cool. It wasn’t because it all of our friends were doing it. It wasn’t that peer pressure of doing it. If anything, the peer pressure would have been to not do it. Our friends were hanging out on Saturdays. Where were we? We were at the high school talking about books and movies and things like that. I think that’s what was so unique about it. All of us were invested because we wanted to be.

As a teacher, I didn’t immediately recall the same range of diversity as these former students perceived as adults. Four of the students were first-generation immigrants, and students did come from a unique mix of social and socioeconomic groups in school. On the other hand, the school was ethnically diverse, but most of the IES students were Caucasian. More students of color were initially interested in the course, but many of them opted out of the class when it became an afterschool and weekend offering.

In some ways, students saw diversity through a lens that we rarely focus on as educators. Teachers are often sensitive to intellectual, racial, and socioeconomic diversity but can easily overlook the student-created categories that dominate the social lives of teenagers. Writing this, I recall the famous line in *Ferris Bueller’s Day Off* (1986) when principal Rooney’s secretary explains that “the sportos, the motorheads, geeks, sluts, bloods, waistoids, dweebies, dickheads” all adore Ferris. While the slang for social groups has changed, these are the type of groupings that were memorable and important for the former students I interviewed. Malik thought the class was filled with students that—even if they were in a more popular group—were outcasts:

> Oftentimes, outcasts are outcasts because they’re odd. If the IES curriculum [was perceived as a] problem [by some people in the school], then the culture of [high school] is an even bigger problem. The cliques and the geeks and the distinction between geeks and the athletes and that entire culture is really, really vicious.
Once IES got started, it became the talk of the town. Everybody wanted to join the class. I remember all of my friends were like, “Can we join? Can we join? Can we join?” It was like, “Okay, now you’re an outcast, or you’re an oddball, but now you’re famous.” Maybe not famous, but you have a niche. We became a family of nutcases, yes, but it’s a family. With family, there are fights, there are good times, and there are bad times. That’s really a social importance for it, as well. That it created a niche for people.

These views on the situation are something I might have been aware of at the time but were not the focus of our work or my memory. I recall the IES students as a group of students who were always willing to work and try things. Looking back, it was the students’ openness to work and willingness to explore that made these students similar. I also remember most of the students having supportive parents. This may have been one reason a community developed—students knew how to support each other. Jane said that, for her, trust in her peers and her teachers gave her the general feeling that probably for the first time in my education life, I felt that I could speak up in front of people and my peers. As a teenager, peers are the biggest aspect of your life. In this class you’re talking in front of people, you’re bringing ideas. For me the class helped me getting over that fear of—not necessarily rejection—but that fear of being made fun of. That was so huge for me. I remember this pure anxiety of even talking in certain classes or having to get up in front of people and talk. It was horrifying.

In [IES], I don’t know if was because I was using peers as the example of “Hey, I can do this,” or when I did say things, I wasn’t being made fun of. A lot of it was, I think, an irrational fear. It was okay in high school to be someone that never spoke up. You did what you needed to do, and there were, I think, a lot of people that probably went through four years without ever having an opinion, or at least saying it out loud because of those fears.

I think [in IES], my peers brought me out of that shell a little bit by being themselves. Having all of these different social groups on the same page allowed us to just be who we were. We got feedback in a positive way by not being made fun of or shut down on our opinions. It really allowed us to challenge ourselves.

Everything about the class was some sort of challenge. Fortunately, we found ways everyone could laugh along the way. For the teachers, the class was a massive workload. It was also humbling because of the inability of me and my co-teacher—well trained, but still novice teachers—to create enough structures to make sure every student was equally
able to engage with any given experience. While we tried to run the class like the proverbial “guides on the side,” the diversity of student needs and interests, coupled with all the student-centered projects, made it hard to keep everyone in a groove—not the groove, but a groove. It felt a bit like teaching inside a pinball machine, trying constantly to be a bumper that kept the ball in play. The feeling of possibility and the unexpected is something I worked to maintain in later ELEs, but the design and structures that developed in later ELEs was a direct reaction to these kinetic feelings and memories from IES.

One existing end-of-the-year journal from 2001 written by Jack (a former student who did participate in the questionnaire but was not a case study interview) captured his less sanguine perception of events at the time.

*The way I see it, the biggest source of conflict in this class is the battle between kids who are completely different tiers of the class. The clashes are between the large First Tier of kids who are kids actually moving at the front of the class, the second Tier kids who are moving behind the class, the Third Tier of kids who don’t give enough of a shit to pick up their feet at all, and the couple of kids in the Fourth Tier who are actually trying to shoot out the whole class’s feet … I was referring to a bit earlier, the kids who complain about how they are not treated as “equals” in the class … are in fact mostly the kids from Tiers 3 and 4 who drag ass. (IES student journal, June 17, 2001)*

The language here is a bit saucy because we wanted students to engage with their authentic voice. In hindsight I certainly could have used less of my “authentic voice,” and we probably gave students too much latitude in this domain. That said, this journal captured the intensity of these conflicts for students who readily engaged with more open-ended experiential learning and those who needed the types of supports that—often circumstantially—Jen and I were unable to provide. This journal entry does get at some of the pressure points around the work in the class. Paradoxically, a strength and weakness of the class is that learning tasks were rarely easily defined and might require so much more work than the average high school assignment that some students
struggled (often for logistic reasons—there are only so many hours in the day) to engage at equal levels. This issue is easier to deal with when working with adults, but it remains a challenging area when working with teenagers on projects that may be hard to define within traditional 45-minute class periods.

On the other hand, the teachers, students, and the class did provide many structures and other supports. The former students interviewed recalled the school pushing back hard on our class. To some extent this was true. Ada’s journal from 2001 (again, a former IES student who did participate in the questionnaire but was not a case study interviewee) captured a bit of other teachers’ perspectives. She mentioned that one of their other teachers

*totally disagreed with everything that we [IES] did. And it sorts of became her routine, to mock our class whenever she could. She objected on the fact, that we missed so much class time because of IES…. Missing that much [of her] class is bad. But what I do disagree with her on is the fact that she doesn’t think what we do is even important enough. She doesn’t know the amount of work each of us has put into each of these projects. (IES student journal, June 18, 2001)*

I heard many permutations of this at the time, and there were remnants of this feeling from all three interviewees. Working as an administrator now, I can’t imagine how much time my leadership spent dealing with this type of miscommunication and pushback. During a one-on-one meeting with the principal, he explained in an avuncular tone that I was like the “crab trying to get out of the bucket. You have to expect when you try something new that colleagues will try to pull you down.”

Each interviewee also mentioned the fact that the school didn’t fund the class. On the surface level, that is true. It was an extra course that met after school, nights, and weekends, and the teachers were not paid a formal salary. We had to raise a lot of money to make the class and its ELEs happen.
Malik said the pushback from some areas of the school gave him a sense of the ELE’s “magnitude, but not its importance.” The fact that students helped to finance the course also added to his sense of the scope of IES:

I think the fact that we were soliciting, doing car washes, filling out grant applications was not what we were accustomed to doing in school. I also remember lying to you about how the WWE wanted to donate money. That was my two minutes of fame. I was like, “Goble is getting happy because all these students are bringing money. Maybe I should just lie and say the WWE is bringing us money, and I’ll tell him they changed their mind.”

I had forgotten Malik’s fib—but this is also a reminder of my power and position as the co-teacher. These students wanted to please me and Jen, even if it meant fibbing. Malik’s interview in the present might also have residuals of this power relationship.

Issues of power aside, our class still managed to bring in significant resources. In addition to getting books donated to the class, one set of parents donated a top-of-the-line computer for video editing, and we did countless big and small fundraisers, solicited local businesses, and were awarded two generous grants from pharmaceutical companies as well as an “Imagine America” grant from the Woodrow Wilson Foundation. All in—we raised close to 40 thousand dollars to cover a significant portion of the trip, video recording tools to make a documentary about the course, and a large symposium on Frankenstein, genetics, and popular culture that explored “man playing God.”

From the point of view of at least one over-confident young teacher (Jen would likely say she was the rational one) and a bunch of adolescents, you can understand how all of us could have felt like a self-made academic success. In reality, we had self-

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4I don’t recall specifically, but I think the Imagine America grant for school/university collaboration was $20,000 and the Amgen grant was $5,000. The former needed to be used for the aforementioned Genetics symposium. I co-wrote these grants with one parent, who was faculty at the nearby university. The lion’s share of the funding would never have materialized without the assistance and coaching of this IES parent and his spouse. This does not detract from the fact that students raised a tremendous amount of money—but it is important to highlight the class’s patron saints.
selected to work around the system. There were significant labor, facilities, and what I’ll call “headache” costs incurred by the district and its administrators. The school’s accountant worked tirelessly with us to handle finances and cut checks. Space was always allocated in the school for our class and larger projects. Administration was supportive in a radically laissez-faire way and immensely supportive when I fought to change the name of the course on students’ transcripts from “Ind. Study English” to “Independent Study: Intensive English Seminar.” This semantic shift was critical for students (and their parents) concerned about college and IES’s impact on their chances for college admission. Clearly, the administration had to field diverse real and imagined complaints from a wide range of teachers. It would be impossible to speculate how much time that took them.

Still, it was easy to overlook the school’s support because, as George explains:

We did things we weren’t supposed to be able to do at that age. We raised a lot of money. I know we had some big chunks here and there. At that age, you’re still kind of above being a Girl Scout selling cookies, but I wouldn’t say you’re getting $40,000 in donations yet.

Students still needed to pay for a portion of the ELE, but we were able to significantly subsidize the trip. With 20 students and 5 adult chaperones along for the journey, we traveled to California from April 16 to April 23, 2001. Arriving at the airport, Malik remembers thinking:

“Oh, my God, we’re at the airport. This is actually taking place. We’re actually going to L.A.” The actual experience of it was kind of like a shock. When I was actually there, I was completely on an anesthetic.

The itinerary for the event was packed. It was helpful that I had previously lived in Los Angeles. I could make some assessments in the pre-Google maps era about how long it would take for us to navigate the city. Having one appointment in Santa Monica (where our hotel was) and another in Burbank on the same day required one to allocate more travel time than the map would suggest. We managed to take one afternoon to explore
Venice Beach, an oceanside afternoon in Malibu, and at least two “open evenings” where students could explore the Santa Monica Promenade after dinner. Outside of meals and those breathers, we were booked solid every day. George recalls it being like summer camp:

I had been to summer camp before when I was lot younger. When you’re a teenager, with people 24/7 and were crammed into a van for a long time on many occasions, it was different. There wasn’t some special room I could go to be by myself and play Super Nintendo (or whatever was cool then).

I felt like there were some people that just didn’t like me or something. And learning to deal with that. Which retrospectively, it’s a stupid thing... If I could go back in time and talk to myself then, I’d be like “Dude, don’t worry about it.”

Jane had similar memories:

A challenge for me was now taking my safe area of the classroom with these people and being outside of the classroom. Not only are you with these people 24/7, but it involved being in a hotel and traveling and going to the beach or eating out. All of these things that were never a factor before, now that was put into play. I remember some anxiety. I think it was a good challenge because it brought us closer. Obviously, we’re out of our comfort zone, but we were experiencing all of these things together.

Malik, George, and Jane spoke frequently during their interviews about the social aspects of the class and the ELE. They also had vivid memories of the people we encountered. We were given a tour of DreamWorks animation studios by one of the artists, and Jane remembered thinking:

How cool would it be to work in a setting like this? There was this courtyard with a fountain, and I remember just going, “Wow! People actually do this for a job.” It was nothing that I had ever seen before in my limited view of what people do for a job. I remember seeing how much passion was in these professions. That was my first experience, meeting passionate people that knew what they were talking about.

At one point we visited UCLA and met with Hal Ackerman, a writer and professor of Screenwriting in the School of Radio, Film, and Television. Jane recalls:
being in this group and hearing this professor talking to us like we were adults. I felt almost like I was a college kid without knowing what that feeling was. I think we probably looked super dorky wearing our matching shirts. I think that was the first time that I remember thinking, “I can do more.” I didn’t even know when I went to college what I wanted to do, but just that idea of there’s so much more outside of high school. For me personally it was a changing point. I realized the traumatizing four years of high school isn’t everything—life doesn’t end here.

[Here and throughout the trip], I felt starstruck in a way. Starstruck without even pinpointing the actual superstars that we met or talked to. It was just the setting in itself. The people that we saw here could have once been in our shoes.

At UCLA another significant happening occurred with Malik and some other boys in the class. While the interviewees remember a culture where everyone is accepted, they also each alluded to the fact that students were really able to “be themselves.” Some of this could have been acting and adolescent identity exploration. No matter the cause, this was a strength and weakness of the class and my leadership of it. Class often veered into the carnivalesque.

Reading Jack’s journal about the tiered students reminded me of Grace and Tobin’s (1998) research on bringing popular cultures to class. They found that, “as the students incorporated their own interests and pleasures into [the class projects], they pushed the borders of propriety, reminding us of the fragility of classroom equilibrium” (p. 47).

Equilibrium was rare. The course often felt like a rollercoaster, always high, low, or a mix of the two simultaneously. Things often felt upside down in the best and worst sense of the term. No incident captured this better than what I will refer to here as “The UCLA event.”

While Malik maintained his love of wrestling, The Smackdown from his sophomore year helped him fall in love with Shakespeare and acting. During IES, we read Richard the III, watched Al Pachino’s Looking for Richard (1996), and saw the play performed by the Royal Shakespeare Company when they visited our town. Malik would constantly perform the opening monologue whenever given a chance, hunched back and
all—especially if a camera was recording him. Film footage exists of him walking outside of class in the middle of a snowstorm, reciting the opening monologue of Shakespeare’s *Richard III:*

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Now is the winter of our discontent /  
made glorious summer by this sun of York.  
And all the clouds that lour’d upon our house  
In the deep bosom of the ocean buried. (1.1.1-4)
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When the class was visiting UCLA one afternoon on our trip, Malik walked through some medieval-looking architecture that transformed him, once again, into Richard. At the time, more than a few students likely rolled their eyes. I asked him as an adult what these performances were all about:

It’s like the difference between understanding the composition of honey and tasting honey. IES was like tasting honey, and then you can study the composition of it. I don’t need to remember every line from *Richard III.* All I need to know is Al Pacino playing *Richard III,* and my experience of trying to play that character to death. That’s all I need to remember.

If I was to study Shakespeare in more detail, I would probably know what iambic pentameter is. I just remember the imagery. If it is freezing cold in Michigan, I can go out in the snow and I think the lines will come back to me. “Now is the winter of our discontent.” Then I’m somewhere else, because now I’m thinking, “What does that mean,” this current chill, subzero weather, what does that mean, in terms of what Richard III is saying, “Now is the winter of our discontent”? Does it mean that he is in big trouble? Does it mean that he’s really evil? That type of thinking.

Malik said for him all learning needs to be visceral and sensory. He thought this had to do with being relocated as a boy and always having to pay careful attention to the sights, sounds, and smells around him. All it took was the visual of a medieval(ish—we are in California, here) arch at UCLA for him to go into character. It was probably mid-70s and sunny, but Malik was about to enter the evening of his discontent.

At our hotel that evening, the Shakespearean star received a midnight call from another IES student—Jack—pretending to be a talent agent. Using a fake voice, Jack explained he had seen his performance on campus and wanted to sign Malik up at his
agency right away! The chaperones heard about the incident the next morning and, while we felt horrible about the situation, the intensity of everyone’s reactions made it hard to suppress laughter. As recalled by Malik in his 2001 journal:

*I didn’t think that was cool, and I didn’t like that, and until this day, I still think that he should stop joking around all that much, I can’t stress that enough. But I can stress it more than enough. Stop doing that.... It’s not funny.* (Malik journal, June 18, 2001)

In 2018, Malik couldn’t believe he wrote that. Reflecting on the incident with adult eyes:

Well, actually, it was hilarious and masterfully executed. I appreciate it now is because it helped me grow as a person. Look, Jack was a joker, that’s who he was, and he’s changed a lot since then. I can’t talk to that Jack [in the past] now, but I can use my imagination and say that if Jack didn’t care enough about me, as a person at that time, he wouldn’t have done that joke.

It’s because he perceived this obsession I had with acting, this eccentricity, and he was, himself, eccentric. He observed this genuine thing that I have, and he interacted with me in the only way he knew how. He didn’t know how to express himself except through joking. I think within a few days, I had already forgotten about it, and we became friends. Although, again, 2001, I was still, “He still shouldn’t do that.”

At the time, I thought it was my chance to break through, to go to the heart of this Hollywood dream. When I speak with first generation immigrants around my age, when they came to America, the thing they want to do is to break into Hollywood.

This type of play was not unique to that event. There were always laughs and tears with this group. At times the range of student needs could be overwhelming because there were so many complex interactions and communications among students during the course and the ELE. I recall Jen and I continuously having one-on-one student meeting time talking through social emotional challenges. My interview of Malik reminded me how we dealt with the immediate aftermath of this situation. Of course, Jack was asked to apologize for being a bit of a jackass, but I also told Malik he couldn’t believe everything people told him. He told me I started testing him:

You would say something, like, “Malik, do you know that my uncle has a hot air balloon? And he went all the way from the West Coast to the East
Coast.” And then you would just smile, and you would wait to see what my response was. And then you actually asked the other students to do that, too. Like, “Go to Malik and tell him something just absolutely embellished and untrue and see what he’ll say to you.” That’s pedagogy, to me. That’s very personable and personal.

For the students and teachers, many unexpected things emerged. George suggested one reason for this was:

We had a schedule, an itinerary to follow, but it wasn’t the same. Sometimes we had to get up earlier than others. We were off by several hours because it’s West Coast time. The trip was just so much different than what I was accustomed to at that point in my life. Growing up, I had a really uptight family. Everybody is uptight. And there is that whole West Coast vibe of everything’s more chill. It’s all relative, but I really enjoyed experiencing that there.

The variety of stuff in California blew my mind. Whether it was all the movie sets we went on, to the food, to the size of the city. It was overwhelming to me from that standpoint. Sometimes growing into an adult requires getting yourself out of some artificially created life routine. It prepares you for things that could happen in real life that are unexpected.

Jane also thinks a lot about the overall experience. As an adult so much of what I learned in LA I still think about. Even watching a movie, I picture being on the set of *Adaptation* for that car crash scene, and I just remember bits and pieces. I think, even at the time, it was just so overwhelming, but I remember standing there and seeing how things were shot but even now, I visualize what it’s like being on a set when I’m watching a movie.

I remember when we toured Paramount Studios, there was this big pool [it was a massive indoor aquatic sound stage], I don’t know if it even had water in it, but I remember watching *The Truman Show* now or something and being like, “Oh, wow, I can actually kind of see what it’s like to film a movie.”

I’m a social worker. I’m not in the film industry. I am not techie, but my whole perception changed from that moment because you were able to see a side of things that no one had ever seen before. I remember thinking this is incredible but also this could be real if this was something I wanted to do.

Among the three interviews collectively, each student mentioned, without prompting, every person or place we met with or visited—often with impressive detail.
The one visit that everyone had something to say about was our meeting with an A-list actor.

The speakers in California were booked entirely by students and teachers. As instructors, our goal was to have students connect with A-list people in every domain of the film process. Ideally, these A-listers worked on a novel we incorporated into the class. We met with producer Robert Evans because he produced the Robert Redford version of *The Great Gatsby* (he also produced the first two *Godfather* films), screenwriter Scott Frank because he adapted Richard Elmore’s novel *Get Shorty*, and director Spike Jones on the set of his film *Adaptation* because it was about the “fiction to film” process.

These speakers, in addition to the less well-known ones, were locked up at least a month before the ELE, but we had no actor. With the trip rapidly approaching and students working on so many other class-related projects, Jen and I took over finding an A-list actor for the ELE. Collectively, students and teachers queried almost 100 A-list actors and were rejected by all of them … until Robin Williams’s people responded … less than a week before we were set to leave for Los Angeles. Further complicating matters, he wanted to meet us in San Francisco.

Fortunately, we had talked to Francis Ford Coppola’s people in Northern California, and they offered to give us a tour of Zoetrope Studios. We had not yet accepted that invitation for logistical reasons but left the door open. When Williams committed, we promptly shifted the itinerary to include a short trip to Northern California. Zoetrope agreed to the tour and to provide the class a space to meet with Williams.

We had not formally read a book that Robin Williams adapted. At some point, we started crafting queries saying, “We studied a book x that star y was in the adaptation of.” The idea was that we would quickly have students read the work before traveling to Los Angeles. We told Williams’s people that we studied *The World According to Garp*. We
did not have time to read that prior to departure. We decided not to tell students they were
going to meet with Williams. They knew about plenty of his work, and if they had known
he was on the itinerary, it might have overshadowed the rest of the trip. As Jane
recounted:

I remember waiting outside in the rain in San Francisco [we were
walking into Francis Ford Coppola’s restaurant at the bottom floor of
Zoetrope] and seeing Robin Williams walk by. I just remember thinking, I
was, “Oh my God, Goble doesn’t see this.” We thought we just saw a star
that happened to walk by and were in utter shock.

We had our first star sighting, then going into this bizarre situation
where we’re walking through the kitchen [of Coppola’s restaurant] and
getting in what I remember in my head as a coffin elevator and I don’t know
what’s going to happen when [it opens on the top floor]. It opens and we had
this once in a lifetime experience to sit down with an incredibly huge
superstar that was totally normal.

When I tell people this story, that I met Robin Williams, they’re like,
“Oh my God, that’s so cool.” But then when I go, “No, no, no. But hold on.
Not only did I meet him. I got to sit and talk to him with the rest of my
classmates in detail and interview him.” Even when I say it out loud, who is
able to say that? No one. Those are things that stand out because I remember
it just being this mystery and an adventure.

Although I recall being in the elevator with Robin Williams, I did not share Malik’s
memory of the

smell of weed on Robin Williams. I remember when we were inside the
studio, he joked around with [one female student] and even played with her
hair. How in the world do I remember that? I don’t remember anything else
he said. I don’t remember any of the questions he was asked. I remember I
asked him a question and he responded back to me. Now, realizing the
suffering that Robin Williams was going through, and the mask he was
putting on to entertain other people is a big part of the whole IES experience
in my memory.

Jane thought that

element of surprise [when we met Robin Williams] was so real for us. In that
moment, we didn’t have time to prep. Which again is why one of the
memories of me asking a ridiculously stupid, in my head, question is because
obviously, I didn’t have anything prepared. None of us did.
As a therapist, I’ve analyzed that encounter and analyzed it more since his passing. and so much of it I remember just this dynamic personality. Although he was a standout, everyone we met had dynamic personalities.

While Jen and I and most of the students thought the Robin Williams’s meeting was a high point of our journey, all the ELEs in this study had some interactions with different types of celebrities, celebrated places or cultures. Robin Williams was the most famous person we interacted with. It is outside the scope of this inquiry, but our collective reactions to his presence does raise issues about the nature of celebrity. Columbia Law professor Tim Wu’s (2016) history of the buying and selling of attention through mass media devotes an entire chapter to “the establishment of the celebrity-industrial complex” (p. 207). In that chapter he collects research that compares the feeling of connecting with celebrities and celebrity culture to the extraordinary feelings that used to be the exclusive domain of religion and religious figures. No doubt, there can be something transcendental about interacting with a celebrity of this magnitude. Most of the students’ journals and recollections in this case study support that idea. But there was a memory that ran counter to this narrative.

Jack’s 2001 journal recalled another student complaining that the trip was “not what they expected” after our surprise meeting with Robin Williams in San Francisco. I shared this journal excerpt with Malik. He posited two theories for why the student might have responded that way. When Malik and I first talked about why the ELE metaphors were so different, he brought up a famous Derrida quote that opened his eponymous 2002 documentary:

“In general, I try and distinguish between what one calls the Future and “l’avenir” [the “to come”]. The future is that which—tomorrow, later, next century—will be. There is a future which is predictable, programmed, scheduled, foreseeable. But there is a future, l’avenir (to come) which refers to someone who comes whose arrival is totally unexpected. For me, that is the real future. That which is totally unpredictable. The Other who comes without my being able to anticipate their arrival. So if there is a real future, beyond the other known future, it is l’avenir in that it is the coming of the Other when I am completely unable to foresee their arrival.
Malik thought that IES, and perhaps the other ELEs, embraced the unpredictable “future to come.” Jane’s opening quote about saying students “were in it, and even leading up to going to LA, we still didn’t know what that was going to be” resonates with this idea as well. Malik suggested:

There was a small group of people [in the class] who were much more interested in the expected future. They got disappointed, and they created difficulty for everyone. To be fair, I wonder if there is an aspect of meeting a celebrity where you feel like you want more. What is that more? Nobody knows. You want to spend hours with them, maybe. Maybe you want to have lunch with them. You want to just spend so much time so that you reach the satisfaction of, “Okay, I’ve had enough.”

According to the journal, when this student complained after the meeting with Williams, I responded, “What else would you like me to do, bring Jesus back to life?” In addition to being embarrassed by that response in hindsight, there were obviously better ways for the adult to respond in this situation. This was also a critical incident to think about my positionality and power. While I was exhausted and frustrated at this response, it did not honor where that student was at that moment. I wish she had responded to the questionnaire because it would have been interesting to hear her perspective on this event.

IES was an extreme ELE in that it stretched students and teachers mentally and physically over the course of the year. I’m sure there were other instances where I used power and position to foreclose on a student’s feelings or needs. I do not recall these happening often but know there were times when a mutual frustration and exhaustion of both teacher and students climaxed in a moment like this. In later ELEs I’ve designed, these moments do occur, but I rarely vocalize a frustration. I might question more, move to a discussion, or have a clearer sense of purpose to articulate to the group. None of this means I’m not guilty of an occasional eye roll.

Certainly, I helped create some of the challenges students were having. Sometimes I failed to make experiential learning accessible to students. Other times I was not always
able to respond as gracefully as I would have liked. Luckily, when “something wicked this way [came],” a majority of the students trusted me and the co-teacher enough to work through intellectual, social, or emotional challenges. Having two of us made it easier to make sure each student had someone they were comfortable talking with at any given time. In fact, Jane remembered “taking the lead from you and Jen, and I remember more of a tag team kind of feel.”

I asked all the interviewees what they remembered about the teaching during the ELE. Jane said she

was never one to journal. I was never one to really write. I was more of a talker or thinker. I do remember trying, [during the trip]. I think part of this was because we knew it was going to be more, not an assignment necessarily, but we were going to follow up on things. I remember thinking, “I have to write down details of what we are doing.” It was almost so overwhelming that I remember almost making it almost more of an itinerary. “First, we did this, then we did this.” Looking back, I wish I had been a little bit more thoughtful of the feelings and things involved, but I think I went more analytical, which is my brain. More of “Okay, you need to remember this happened first, then this, then this.” I do remember now having to write down things and having prompts from the teachers before and after events.

Jack’s 2001 journal captures some of the writing happening in his hotel room afterhours:

At night, we would all sit down and just write. What other four kids would do that? Or, maybe more importantly, what other type of conditions would inspire four high school kids on spring break in California to all shut up and write? We just felt like writing. I’m sure we still would have done it even if journals weren’t “assigned” to us. I can only speak for myself, but we were so inspired by what was going on around us, writing it all down was the only way to get it out of our heads, and try to convert it into some kind of tangible matter. A piece of paper with writing upon it could hardly ever do justice to what we were feeling, but I think it was well worth a try to give it a shot.

A friend of mine from college was working as an agent at a large talent firm. At the time he represented the sitcom writer (That 70s Show and South Park) and screenwriter

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5Student journals did end up being edited into a piece about the trip for a local city newspaper.
(Dude Where’s My Car) Philip Stark. They met with us at a conference room at our hotel. We had not formally studied Dude Where’s My Car? But it was an early meeting on the trip with someone who worked in the industry—we thought it would be a great warm-up for the things to come. Jane remembers:

A moment of, “Okay, none of us has actually seen the movie. How are we going to talk to this person about the movie that we haven’t seen?” I remember a small banter of, “Okay, we could ask this.” I remember that being like and oh s#!t moment [for the class].

[During the ELE] I remember feeling like it was a lot of more laid back and there were meetings where you said, “Here’s what we’re going to do. We’re going to do this, kind of get your minds going.” It was never a situation where you were going to just listen to someone. We had to be prepared to ask questions.

George had more global memories of the class instruction:

More than any other class that I had experienced to that point, served as some kind of example that learning is fun. It’s not all dry books and stuff. It took the material from the books and then it drew in material that was from multimedia sources. It combined them to flow together and intertwine between each other around themes. It basically allowed you to start seeing connections. At that age everything really was abstract and compartmentalized, content would sit in different areas of your brain and aren’t combined. I think IES helped make these connections for the first time. These things that are about an English literature class, they can be applied to people who write screenplays and all kinds of things in the real world.

I felt like I came out of the class learning a lot and also had an enjoyable experience. The course was multi-disciplinary in so many ways—we wrote screenplays, edited video, worked the phones to try and get donations and all kinds of other things. It helped me take the abstract of education and combine it with real life application.

Malik recalled during IES

somebody would say something like, “Wow, this is my epiphany,” and then you’d [the teacher] come along, and you’d ask, “Okay, but what about this connection here? Or there?” And it’s like, “I’ve never thought about that.”

Once I joined IES, because we had all of these engagements that made you think, “Wow. This is real,” and then when you connect it to art, it becomes personal. That’s what I would focus on in terms of the IES
pedagogy. I think it’s this idea of making connections where none exist or where none seem apparent. And always making the epiphany open-ended. There’s always more possible, like the story’s never fully written. It sticks with me.

George thought teachers are not just supposed to be an expert at a field. You’re supposed to be an expert at teaching. Which means the process of basically getting people to understand things. People understand things in all different ways, through different kinds of things, and at all different speeds. If you want to be effective at what you do, you need to be able to adjust the way you do your job to accommodate those things.

In a class like IES, you are doing so many different things. [This kind of teaching] is not easy, but it has the best chances at being the most accommodating and effective for different types of people.

Thinking about the ELE in relation to the class as a whole, Jane didn’t feel like we were tourists. I didn’t feel like we were just there to look at things just like everyone else was. I remember going to Santa Monica Pier and thinking it was just so cool, but not worrying that oh, I’m just another tourist. I felt like it was a part of something bigger, if that makes sense.

We were all experiencing this unique situation together we were everything seeing everything through a new lens.

George thought the newness of everything was one reason people were able to embrace the diversity of students in the class.

We were all novices at the things that we were doing. A lot of the assignments and a lot of the material were all stuff that nobody had ever done. The class was not designed for you to just be on your own and just do everything on your own. You had to cooperate to get things done.

Ada’s 2001 journal captured a similar sentiment:

"The environment in the class has taught me about dealing with different types of relationships in a setting where group work and cooperation take the number one priority. In a situation where your success depends on the success of the group you quickly learn that being independent doesn’t mean being isolated. It has also forced me to learn to better organize and balance my own priorities, not that I always did a superb job with that."
This type of work can be complicated for educators to assess. I asked Malik, Jane, and George what they remembered about grades and grading. George’s comments best capture their collective responses:

Everybody ended up getting some kind of decent grade, an A of some sort. Everybody ended up putting enough work in that those grades were justified. That helped because it took the focus off maximizing your grade and more on learning and interacting with the material. If it was a super grade intensive class, people are going to do just what they have to do to get the grade and less what they need to do to make the learning experience successful for that.

Certainly, the experience was successful for many of the students in different ways.

Jack’s 2001 journal gives one student’s perspective:

*I definitely saw the standard high school experience in a completely different light. I simply could not go to my other classes with the same caring I had for them earlier. I saw what very few other high school kids had seen. I saw way beyond the realm of public education, to a form of education where you educate yourself through experience in the real world. I loved it so much.*

It is probable that a small group of students that did not respond to the initial research questionnaire might not have had as positive or perspective shifting experience. It is also possible reading Jack’s 2001 thoughts that the class and ELE may have created unintended challenges for these students during the remainder of their high school career and even into college. As Malik reminded us earlier, “The story’s never fully written.”

Jack detailed new perceptions that may have been caused by the trip as a student, while Jane’s adult reflections link some perception shifts to new actions:

The class allowed us to grow as students and people. We weren’t 14- or 15-year-olds coming into high school. We were far enough in that our future was on the horizon. We were thinking about colleges and jobs. For me anyways, IES was a game changer in what it allowed me to do. I remember my parents wanting me to stay and go to community college for financial reasons, but I went away to school. Again, for an anxious person, that was not the safe decision. I went to a school that I didn’t know much about because I got a scholarship. I think that was a huge growing point in my life to have done these things that weren’t safe.
I get excited when I talk about this [class]. That’s something that doesn’t happen a lot. I’m not talking about prom or the championship game or something like that, I’m getting excited talking about an English class that I was a part of. That’s so cool.

Ada’s 2017 questionnaire suggested the ELE was

like a time bend. We saw a glimpse of the future, a time after college, when all doors really would be open. Nearly everyone we met had forged a different path. No one’s career was ready made. It was sobering in that respect. While we were there, high school felt distant, past, irrelevant. The future seemed present and full of possibility.

This idea of time bending, multiple doorways and pathways may mean the ELE had one thousand faces. Malik frequently talked about how the class let him take on role, after role, after role in order to develop his own personal myth:

I’m so convinced now that people need to experience a hero’s journey. Joseph Campbell will talk about the importance of spaces. For me, the IES classroom was a type of temple. A very particular activity was going on, which contained many different things, but it was a very specific type of experience that was sacred.

The journey it was exactly like the Odyssey. We began in Michigan, we leave the homeland, we go to a place. In the Odyssey it might be riding the ship—we rode the airplane to California. The entire way we thought about [how] popular culture encourages myth making. It encouraged internalizing popular culture as a tool of meaning making. It was a small world of a role play. We like to see a hero go through challenges, just like our challenges of insane students, unexpected things, difficulties. You go through that entire journey, you come back, and you try to internalize the whole experience.

The only reason people don’t immediately regard all this as a myth is because all of the forms we’re interacting with are not immediately magical to us. But they’re definitely magical. We went to a place where you’re walking around with people who one day, can pretend to be millionaires, actors, characters on screen. Or they can pretend to be monsters and they put on a mask. Then just the next day, they’re completely normal human beings like you and me. That’s magic. That’s a myth.
Chapter VII

FINDINGS: NASA AND REAL-WORLD MATTERS—

CLIMATE CHANGE IN THE CLASSROOM

*Climate sets the range of conditions in which humans can thrive.*
(NASA/GISS Climate Scientist Pushker Kharecha, Realworldmatters, 2013)

I had worked with NASA Goddard Institute for Space Studies (NASA-GISS) as a curriculum consultant since 2010. For the 2014 NASA/RealWorldMatters Climate Change in the Classroom (CCIC) workshop, approximately 30 middle and high school teachers working in multiple disciplines from New York and Illinois were invited to work with 10 NASA/Goddard Institute for Space Studies (GISS) scientists on an inquiry-based curriculum. Three teachers that participated in the event were interviewed about their experience before, during, and after the event. Eleanor, a middle school social studies teacher sets the stage:

I was a little worried about [meeting with these scientists] at first. I don’t know, for me NASA is the top of the top. I grew up idolizing the work of NASA scientists. I didn’t want to come across as a person who was wasting their time. I wanted to be someone informed and wondered if I was informed enough.

As a cultural formation, NASA is something the general public has an awareness of. Many cultural touchstones are linked to the workplace that was the focus of this Experiential Learning Event (ELE). These included historical events like the space race between the USSR and the 1986 Challenger tragedy, foodstuffs like NASA’s preferred space drink Tang, and films like *Space Camp* (1983) and Oscar©-winners *The Right Stuff*
For anyone coming of age or living in the latter part of the 20th century, NASA figured large in the public imagination. Eleanor’s excitement and concern about working with NASA scientists were echoed by two other interviewees, both high school science teachers. John said,

[Because] there was this opportunity to talk to different scientists and ask your own questions, it felt like there was more responsibility on me as a participant. I was able to make choices about what I did and what I wanted to get out of [the event]. It was a day and only a day, you realize, “Hey, this is a one-shot opportunity to do this.”

Rachel spoke more generally about collaborating with scientists in the field.

I’m always in awe of people [field scientists] who spend time doing this work, whether they’re out there restoring or out there fighting to change people’s perceptions on things by fighting for real science. They’re actually using the real science to show evidence as to why we need to do things. These are the people that are doing it and bringing it to us so that we can then spread the word.

This idea that the NASA scientists were doing “real science” was a curious turn of phrase that will be revisited as the story unfolds. Unlike the other two ELEs, this event was designed around a very specific curriculum. For over three years, NASA education coordinator and RealWorldMatters founder Carolyn Harris, NASA/Columbia University scientist Pushker Kharecha, and I worked with a team of scientists and teacher advisors to make a “base curriculum”—Hot: One World, One Climate. The units contained ample “hard” science, and online mini-lectures from NASA scientists with a mix of popular texts, comics, fiction, and non-fiction films, and a role-play simulation we developed around carbon mitigation. The idea behind the work was that teachers in any discipline could use our inquiry-based lesson plans as a springboard to their own curriculum. At over 100 pages, we hoped the curriculum would help teachers and students understand the scientific and social issues surrounding content that is often fraught with political challenge in schools.
We had done one two-day ELE around the curriculum the previous year (2013) with an earlier draft of the curriculum and a different group of teachers. This time around, we only had funding for one day. Our objectives were captured in the program as Goble, Harris, and Kharecha, (2014):

**Learning Objectives**

Teachers will be able to:

1. develop understandings of some of the basic ideas and science surrounding the topic of climate change by using diverse media and through collaborative discussions with NASA and Columbia University climate scientists
2. make connections between existing curriculum, climate change and the Common Core State Standards and the Next Generation Science Standards
3. gain professional experience, teacher and expert relationships, and customized Hot lessons for teaching students about climate change and developing their problem-solving abilities and other 21st Century skills.

Figure 7.1. NASA-CCIC Learning Objectives

Because this ELE was limited to a single day, we thought carefully about what participants might be able to do prior to arriving at the NASA/Goddard Institute for Space Studies in New York City. The following was suggested in our pre-event materials:

**How do I prepare for the workshop?**

Prior to attending CCIC, participants are required to:

1. preview the online course materials for 2 Hot Curriculum Units that can be accessed at [http://www.giss.nasa.gov/education/iccic/nodes/node24.html](http://www.giss.nasa.gov/education/iccic/nodes/node24.html)
2. watch the first episode of Showtime’s climate change series “Years of Living Dangerously” (39:09 minutes) at [http://yearsoflivingdangerously.com/?p=360](http://yearsoflivingdangerously.com/?p=360)
3. identify a Hot lesson that you or your school’s teacher team wants to develop at the CCIC into a customized lesson plan to use with students back at school. Email the title of the lesson selected to rah40@columbia.edu by April 27th.

**NOTE:** It is strongly suggested that teachers bring a digital device to the workshop in order to access all the materials.

Figure 7.2. NASA-CCIC Pre-Workshop Preparation

Teacher feedback from previous workshops allowed us to refine the material for this ELE. The Next Generation Science Standards (NGSS) (2013) suggest climate science as a topic to be integrated across the secondary curriculum; many teachers felt this content was not perceived as important by their schools or was too politically charged to teach in some classes. It can also be challenging content to teach because it is
interdisciplinary and does not fit neatly into the “bio, chem, physics” paradigms of science instruction.

The marginal nature of climate science made it important for us help teachers become more comfortable with the science and social issues surrounding global warming. We wanted learners to have a rich but accessible curriculum to explore prior to arrival. Some lessons were Science, Technology, Engineering, Mathematics (STEM)-heavy, while some used a variety of multimodal texts to explore both scientific and social issues related to climate change. We never intended it to be a rigid curriculum. In fact, it was given to teachers as a Microsoft Word document that they could freely download, edit, remix, and reimagine the curriculum. Connecting this to Tom James’s (1980) ideas about “letting the mountain speak” during a learning experience, the Hot curriculum became as a sort of interactive guide book. It was not required that teachers use it, but it was there to help teachers craft their own adventure on the mountain.

We knew from experience that it might be intimidating for teachers to work with top scientists. Fortunately, Carolyn and Pushker had longstanding relationships with the NASA scientists invited to the event. An invitation was sent out to a wide range of NASA/GISS Earth scientists, and those that came self-selected to join the teachers for the afternoon. Most of the researchers had worked with teachers and students in other NASA outreach programs. While a nice catered lunch might have been an incentive for some, the scientists’ behaviors, as reported in post-event surveys, research questionnaires, and these interviews, suggest that many of them joined the event because they enjoyed sharing their research and working with educators.

Outside of the beginning and end of the ELE, we focused on a progression of teachers working with teachers, teachers collaborating with scientists, and teachers and scientists working together to “peer review” and critique lessons. That sequence is captured in our program agenda as explore, evolve, enhance, elaborate and evaluate:
While none of the planners of this ELE are fans of the federal government underfunding climate science or, as is the present case, cutting said funding, the unimpressive physical space seemed to lower some participants' anxiety. As Dewey
(1914/1944) stated in Democracy and Education, “we never educate directly, but indirectly by means of the environment” (p. 19).

This NASA satellite office was placed in Manhattan during the ‘60s to give the organization and its scientists easy access to media. It is an unassuming and unlabeled office building on Manhattan’s Upper West Side near Columbia University. If participants thought NASA’s NYC outpost would be like Cape Canaveral in the movies, or Tomorrowland at Disneyworld, they were certainly let down. The interior looks like it has not been updated since 1978. Teachers went through a heightened security check before entering the building, but the space could best be described as coffee-stained.

John, Rachel, and Eleanor had never been to New York City. They all expressed thoughts similar to Eleanor:

It was exciting to be able to say that we got to travel to New York City. We got to study at a place that was above the Seinfeld restaurant. We got to walk around Times Square at night. Yeah. I mean, it certainly brought a level of excitement and anticipation to learning. This is something you don’t get when [our administration] says, “Hey, let’s have a staff meeting.”

Eleanor was also “shocked” because:

NASA’s work environment was very humble. I pictured this organization in my head as being the crème de la crème for scientists, research and exploration and it was just beige walls like our schools. I was like, “Oh. that was a bummer.”

As teachers came into the work space, it was exposed as a large open and unremarkable room with seemingly ancient chairs (including a random wooden chair or two mixed in with ragtag stackable ones). Carolyn did a short introduction described by Rachel:

I’ve been to workshops where they hand out the curriculum and then they go through a PowerPoint with all the stuff behind it. They’re like, “Okay, now you need to take this back [to the school and use it].” I have to admit that we get a lot of that here [at my school]—“This is what you need to do. This is the curriculum. Now you need to go do it.”
[The NASA ELE] was more of, “This is what we have thought about. This is the science, and this is how we thought it should be presented, but how would you do it?”

The introduction transitioned to a climate themed “icemelter.” We tore up the book *Climate Change: Picturing the Science* by the head of NASA/GISS Gavin Schmidt and photographer Joshua Wolfe (2009). Laminated photos were spread across the floor and we asked teachers to:

Choose one of the “climate curiosity” images that you can use as a metaphor to describe your personality.

Please answer the following three questions. You need only write enough notes, so you can speak to your answers when we share in groups.

1. How is this image a metaphor for you or some element of your personality?

2. What might this image communicate about Climate Change?

3. What are some questions you would want to ask a scientist or photographer about this image?

I did not have a strong recollection of this activity, but all three interviewees mentioned it as significant pedagogical move that helped set the stage for the event and helped them engage with the other educators around the questions that interested them during the day. Eleanor remembered it as a gallery walk that we did with all different pictures. And we all picked a different picture and talked about what we’re seeing. That established right up front that there were so many of us there from different backgrounds. Being able to know what our differences were upfront made it easier for me to have a conversation in a small group. It made it easier for me to ask questions. It also made it easier for me to ask questions because coming from a social studies/humanities background, I don’t have all that scientific knowledge that a lot of the science teachers might be bringing into the kids. So, it allowed me to know, or at least made me think about who to go to for the information I want.

After our icemelter, we showed a ten-minute clip about Superstorm Sandy from the *Years of Living Dangerously* (2014) documentary TV series. We developed Learning Experience Organizers (LEOs) to help participants interact with the video while they
were watching. From there we counted off into random groups and added two scientists to each group. In groups they were to discuss the film’s content in light of “what we know about climate change, how we know, and what we need to know.” John thought this video started the day “very broad” and it was

like a sweeping net collecting everyone to make sure we’re all kind of starting from the same common building point. And I say building, because there was more to come from that step.

I don’t know if sequential is the right word, but it seemed comprehensively structured, where the details rested upon the previous experience. I think as the scientists came in and as there was more dialogue and chances to kind of peer converse, you could see that, “Okay. This kind of fits.” It was broad, but it was also directional. So, it was leading us to that conversation at the end, where we had the time to talk with our counterparts.

Scientists (including the head of NASA/GISS) participated in these two opening activities. Rachel said:

[Gavin Schmidt, the head of NASA/GISS and other scientists] sat with us. Somebody had mentioned our cab ride. They were laughing with us about how we were all hanging on for dear life in this cab because we were not used to New York City cabs. It was very personal, and it was very just one-on-one, and I think that is so different [from a more common professional learning events].

Eleanor made similar observations about the way the scientists opened up early on in the event. She thought the scientists were

just so personable. It was a small group. It wasn’t high stakes. It was a very low stakes environment, right? When we got to sit with [Pushker, a climate scientist], he talked a bit about his family. And he talked about physics. He talked about his doctorate. Just about stuff. You felt like you had a relationship with them within just ten minutes of talking. It was awesome.

Participants found time to talk about the content as well as personal information. Teachers’ pre-event work, the icemelter, film discussion, and time to engage with the existing curriculum comprised the “exploration” portion of the day. Outside of the closing activity and general consulting with groups, Carolyn and I were mostly
timekeepers, making little announcements like “You can use any of these open spaces to work” and “Lunch is served.”

We did not put any requirements on the type or size of teacher teams that developed during each block of work time. We reminded participants that they should be moving from exploring to enhancing their ideas before we came back to formally evaluated lesson ideas at the end of the day. Carolyn connected the most appropriate scientists with teachers based on their interests.

I asked John how his project team emerged during the event. He explained the process from beginning to end.

We had really good dialogues among our small groups. [One of our early groups] was mostly high school science teachers. We talked, and people began to show different preferences or different ideas. So, maybe there were eight, 10 of us and we kind of splintered up into groups of three, or four, or two, depending upon what direction our interests were going.

I [ended up working with another] AP science teacher. We started thinking about how could we add this on at the end of the curriculum after the AP test. We have a couple of windows or a couple weeks there in May, where you could do some really cool outside-the-box [climate] modeling.

Scientists would come in and talk a little bit, then we’d kind of debrief and plan a next strategy of questioning or where we wanted to go. Then [at one point] we were in the whole group and we shared out. We were able to [continually] contract and expand our ideas.

John thought this shared content expertise and time window drove his conversations and lesson design. Some groups were interdisciplinary. One middle school group also started large with English, science, math, and social studies teachers from two different states. They worked as a large group for part of the day and then split into smaller groups based on geography and school buildings. Rachel elaborated on the process, starting with observations about the physical place:

It wasn’t a lecture hall, either. It was just a series of rooms and offices where we broke out, sat around in these rooms and offices, around tables and chairs… I wasn’t looking for right or wrong answers, I was really trying to get underneath the skin of stuff. For me, personally, it just makes me feel...
like I’m learning something in a better way. It takes out that ambiguity of learning sometimes.

I asked Rachel, “In what ways did conversing with scientists make learning less the ambiguous?” Rachel said the scientists helped you ask:

“How can we look at [the science] from a personal perspective?” They knew what they were doing, they knew the science behind it. They wanted to make it usable so that kids knew, understood it, that adults understood it. I think that’s what they were trying to get through to us.

[Dorothy, a scientist] talked about her work in botany and where it led her and how she’s seeing all of [these changes in the local ecosystems] because of climate change. I was like, “Wow, I can see that in my own backyard.” They connected you to the knowledge. They didn’t just say, “Here, this is what I know,” you know? They wanted you to be connected to it.

Rachel also used this type of ecological thinking when sharing her metaphor to capture her perception of the event. For her, this ELE was

a place that I could go to plant a seed. It will grow because I’ve got more information to help it grow now. But when you take and move yourself out of a place and you get more information, you gotta have some kind of medium to grow it in. Just because I know about climate change doesn’t mean that I can actually teach it. I feel like I need the medium. I need the materials, I need the experience of working with other people in order to see how that’s gonna work in my classroom.

I think this was different because it was smaller. There were less people and it was more personal. I didn’t sit in a room listening to a climatologist talk to me. I sat at a table with that climatologist, having a one-on-one conversation. That was a huge difference. A lot of times, I don’t get that when I go to conferences. You’re sitting in a room with 30, 40 other people and someone’s up on a podium or stage, and they’re talking at you.

Twenty-nine out of 30 participants filled out basic post-ELE evaluations in 2014. Part of that evaluation was a simple plus/delta (+/Δ)—meaning tell us at least one thing you liked (+) and something you might change (Δ). Twenty-seven respondents said the best part of the day was working with scientists—in multiple cases, people echoed Rachel’s earlier comment about “real science” and said they liked working with “real” or “actual” scientists. In addition to the personal nature of the discussions with scientists,
and the personalization of the science, John highlighted another aspect of the dialogue that “kept things real”:

Any time you get to ask a professional scientist who is an expert in their field, you don’t just see the depths of their knowledge and effort and commitment. You also see what they don’t know. There are plenty of times when [scientists] said to us “I don’t know that, but I know where I can get the answer. Someone else covers that topic.”

I was humanizing to see, “My gosh. You’re super smart, but you don’t know that, but you’re connected enough that you can find that, and that’s what makes you super smart.” It’s almost circular. You don’t have all the answers, but understanding you don’t have all the answers is part of being super smart. I was impressed by their humanness and also their limits of their knowledge.

This paradox of deep expertise and accessible ignorance might be one reason participants thought they were engaged with “real” science and scientists. Because this was a recurring turn of phrase, I asked Rachel a bit sarcastically, “Is there fake science? What do you mean by that?”

Of course, there’s real science in our classes [and textbooks], but there’s not enough of it to use and use again and again and again. [Textbooks] talk about real science but the pedagogy behind it, how you’re supposed to present it, how you’re supposed to get your students to learn it, how they’re trying to get you to use their materials just doesn’t work.

I’ve gone to a lot of PDs for science textbooks. I have been to some that I’m like, “Wow! Why would I even use this textbook?” even though there’s real science in that textbook. It’s the way it’s structured, the way the lessons are; it’s just it makes no sense to me.

Also, science textbooks generally are about six months to a year out of date when you start to use them when they’re first brought out. That’s because they’re writing it, and then it has to go through the copyright, and it has to go through publishing, it has to be vetted, and all that other good stuff. By the time you get it, there’s old material in there.

Maybe [the way science was presented to me at the ELE] just made more sense to me. It was different because it didn’t have that formula, you know what I mean? Like, if you do A, you’ll get B; if you do B, you’ll get C. This was more open-ended than that.
At one at time, a lot of this material [from the ELE] was being updated all the time, so it wasn’t stagnant. That’s probably why.

Perhaps the shapeshifting nature of scientific inquiry was mirrored by the workshop structure, the scientists, and the curricular resources for those who felt the need to modify the words “scientist” and “science” with “real.”

While the scientists clearly made an impact on almost all of the teachers, 10 of 29 respondents in the post-event evaluation also mentioned that they really liked working with or networking with peers. When I interviewed John, Rachel, and Eleanor, their initial focus was on the scientists, but they all made mention of connecting with other teachers. I asked Eleanor if conversations with colleagues had any effect on her day. At first, she said. “I don’t think it had a direct impact in my thinking.” After a pause, she went on to say,

I did appreciate with being with different people. Not only with high school versus middle school. But just different kinds and areas and different school districts is just being able to hear their stories and their experiences, to try to get a better, more global perspective of what’s happening.

I think it’s really easy for me to sit here and have conversations with people who think like me - my closest friends, my closest family. [For that reason, it was a cool] opportunity to sit with a group of teachers from New York. After seeing that sequence [in Years of Living Dangerously about Superstorm] Sandy, that storm was fresh in their brains. They were able to talk about how it impacted them.... It reminded me that that element of humanity. These are people's lives. [Climate Change science] isn’t just a number on a paper to tell you how many storms we’ve had, or what the percentage of global warming or ice melted. These are effects that are really impacting people.

Eleanor said she never questioned global warming before the event. She did, however, think she underestimated the size of the problem prior to attending the ELE.

When you hear about [climate change] in the news, you kinda start to dismiss it after a while. “That’s that loony bin environmentalist who’s trying to save the world.” But I felt like I walked away with a much deeper understanding of global warming by asking questions.

If global warming is happening or not [is] the wrong debate. The debate is, we have people who are starving. We have people who don’t have
rainfall. We have people in all these extreme situations. How do we fix it? Forget about the talk. You know what I mean?

There wasn’t anything at the NASA experience that I remembered explicitly saying, “You have to believe this. You have to do that.” But I think [my understanding shift was] just based on our conversations.

I used to question how the United States’ role in [global warming]. How do we get other countries to be more responsible for their contributions and outcomes to try to stop it, slow it down? I don’t think I have that debate in my head anymore.

I took away this internal belief that global warming should probably be more discussed. It shouldn’t be something that’s just briefly heard about in the news from politicians. There needs to be more open discussion for our kids through the humanities, through math, to say, draw your own conclusions. But here’s the data and what can we do.

We had this conversation [the climatologist] Pushker. [He explained] that when you talk about climate science and you talk about these debates of global warming and politics. There is no debate in the field of science. 97% of the scientists agree\(^1\) that global warming is happening.

I took that personally because every day, as a teacher, you feel like you’re being attacked with the decisions you make. I’m in the classroom. I know my kids. I’m the expert when it comes to what the kids need. I get upset when I hear politicians and news and media saying that teachers are unresponsive or insensitive or incapable or ... It’s all about the test scores. The I’m just like, “walk a day in my shoes and you understand much more.”

That connection for me was really important to know that they are the experts in their field.

Eleanor brought her lens as a social studies teacher to the event. Rachel and John taught some environmental science classes (in addition to biology and chemistry). They articulated other new ideas and behaviors related to the ELE. John said,

Oh my gosh. I’ve been what? Twenty years out of grad school and so [the ELE] was like, “This is really what research and science feels like and looks like again.” And it was allowing me to reconnect the dots from 20 years before, when I was doing it myself a little bit, and not the degree [of NASA scientists], but having been there in the past allowed me to kind of

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\(^1\)Recent research suggests that there are common errors in the 3% of climate research that rejects the scientific consensus on global warming (Nuccitelli, 2015)
recapture that enthusiasm for open endedness and not knowing where the
tunnel is going to lead [in my classroom].

He explained that this ELE was a reminder for him to do more “outside the box”
teaching. I asked him to elaborate in the context of bringing that open-endedness into his
daily teaching. He responded:

I feel like I’ve been empowered to scrap packaged labs, or assessments
with mostly fill in the blank type answers. Now, I’m more open to giving the
kids a problem, have them do some brainstorming and approach the process
differently, without knowing that there is a three-line space for them to fill
the answer in on a worksheet.

Instead you kind of give them less, and they come up with more. They
figure out what kind of data to collect, they figure out what kind of graph to
make. They figure out how to interpret the line. I think the messiness and the
sloppiness is valuable.

Rachel also commented on the open nature of this professional learning experience
in light of other professional learning experiences. She said most events don’t really have
a how or why. Instead, it is usually a cut and dried “here is some curriculum you should
use” process. She thought the design of the day was

very open, so I could interpret the way I wanted to interpret it to a certain
extent, because I knew the science was real and I knew how to behave with
the science because I’m a scientist. But the actual facilitation of it in my
classroom, I can use it and I can use it all as one piece, I could take it apart, I
could use it over many different chapters. It wasn’t something that I had to
do all at once for it to make sense. I could take bits and pieces of it.

Her perception echoed John’s about the contrast between this event and more common
school practices. She gave an example.

In chemistry, [our department] is fighting constantly about, “Why do we
need to teach X, X, X, and X when it’s not on the final exam,” so we don’t
do it. I taught chemistry for a couple years and I felt the push to do so much
in one semester that I felt like I wasn’t giving my students the opportunity to
really understand chemistry; to learn it, to like it, you know? I want my
students, when they learn something, to find something enjoyable about it.

She also elaborated on the linear ways teachers teach. I asked why she thought teachers
often used more traditional and direct instructional methods.
That was how they learned. They felt that was the best way to learn. So now all of their students have to learn that way too. And it’s because they’re the teacher now. They’re the ones in the classroom. They’re the ones in the front of the room.

I asked if she thought this was the only reason classrooms don’t break from prescriptive instruction. She said teachers are afraid that if they change it will blow up in their face. It’ll make them look bad, you know. So, we’ve got to stick to this schedule thing. This is the way I learned how to do it. This is the way you’ll learn how to do it god darn it…

[A lot of teachers] feel they earned it. They deserve it because they put in the hard work. They’ve put their years in. They went to college. They suffered and got good grades. They’re in total control. That’s a power trip for them. I look at that and go, “Oh, I don’t care who’s in charge. I mean … so what?” But for some it’s just so important to have that power. I often wonder about teacher who give out [limited numbers of] bathroom passes in a semester. I don’t really care how many times you got to go pee. You got to go to the bathroom, go to the bathroom. Then come back into the classroom and do your work.

So how did she, Rachel, approach teaching differently?

I wrote a quiz today. Part of it was on material I went over yesterday. I was grading some of them today, and they’re terrible. And it’s like, okay, so this must mean that I need to step back. Something isn’t gelling here somewhere. Maybe I need to rephrase the question. Maybe I need to rethink the way we do it. A lot of people take that so personally.

Rachel’s quiz was a different from the usual single-answer assessments. It included lots of drawing and mapping—open ways for students to display their knowledge. I asked if more open-ended learning experiences require teachers to be comfortable with the kind of failure she described.

You have to be. Or even just sloppiness. Life is messy. I mean, you know, you study biology. Life is really messy. I always tell them it’s all about the sex and the poop. That’s all it is. And it’s all messy. And they always laugh at me. And I’m like guys, it really is. Truly, life is messy.

The whole idea of classroom management is so important in order for learning to be ... to occur. Well, yes and no. When I first [started teaching at this school], I was observed by the principal. The first thing he said to me was, “your classroom is loud. It’s noisy. Nobody looks like they’re doing what they’re supposed to be doing. But when I walked around, and they
were working in groups, they knew what they were talking about. They knew what they were supposed to get done. And they were being successful.”

My students were noisy. They were loud. I mean, that’s just the way it is. That’s my classroom every day. You know what I mean?

I think you see [this conflict] in so many places. An example. When my granddaughter first went to kindergarten. My son-in-law is from Mexico. My granddaughter is bilingual because they speak a mixture of English and Spanish at home.

Her parents got called into school. And my daughter called me up crying. And she’s like, “they want to test her. They think she needs speech therapy or something like that.”

I’m like, “Whoa, what’s going on?”

[My daughter said the teachers] say that “when they talk to her [Rachel’s granddaughter] it takes her a long time to respond.”

I’m like, “do they know that she’s bilingual? Do they know that your primary language at home is not English?”

[My daughter responded], “Well, they didn’t ask.”

I said, “you need to tell them. Because she’s processing it from English back into Spanish and into English the way you talk at home. That takes time for a five-year-old.”

By way of metaphor, I suggest that teachers just don’t stop to smell the variables. Rachel agreed, saying she teachers often just “stand in the hall and you can just kind of see kids as numbers. Students don’t want to go to classes because, you know, it is so much structure. [On the other hand] there are kids who absolutely need structure.” I asked how Rachel could tell what kids need structure and what ones don’t. She felt determining who needs what is sometimes a gut feeling - but it is more of an experienced teacher feeling. We have been told we need to know our students. Sometimes you do and sometimes it never clicks. However, knowing a student that needs more structure are those that flounder is why I provide structure for independent projects, like research templates, questions, rubrics, and check in sheets. I project we’re working on now has four check in dates, some need a few minutes—others need longer to go through the check list to make sure they are on track.
Rachel’s comments are a reminder that more inquiry-based/experiential learning situations are not without structures. Designing flexible classrooms is both art (those feelings) and craft (the structures to help students work through ambiguity).

Both John and Rachel talked about the difference between rigid structures and flexible structures. They both highlighted the importance of embracing the messiness of science and life in the ELE. I shared that observation with Eleanor and asked her if schools should have structures that allow for more open exploration. She said:

When I saw the [flexible] structure that was put in place for the ELE. I was excited, I’m like, “Oh my God! I’m actually gonna have fun while I do something new.”

That is the part [more flexible structures] I feel like all of our kids crave. They wanna have fun while they’re learning. If we can get them to keep asking questions and just give them enough structure to say, “You may not know how to ask questions yet from research. But I’m gonna teach you that part. So that the next time you pick a topic you want to learn about, you’re able to do that on your own.”

There’s an element of scaffolding. I felt like that was what this structure provided us. Just enough that we needed to be able to meet the goals at the end.

I just think that we have to find a way to instill in [students and teachers] from the beginning that your learning is your learning. You learn all the time.

We very easily fall into this mindset of trying to do what we’re supposed to do. With the mix of the [new state mandated teacher evaluation system], we lock ourselves to the way that [the textbook or district office] laid out curriculum on a piece of paper. We are just so busy in our day-to-day actions in the classroom. They [researchers] said that the teacher can make twelve hundred decisions in the course of the day, right? But you’re just exhausted.

The thought of really trying to get yourself out there and say, “What can I do differently? How can I do this differently?” [Its hard, lots of times you are] afraid to put yourself out there in fear of an evaluation. In fear of a bad observation. In fear of failing. We fall back on what we think works okay.
I point out that, in reality, most teachers aren’t fired based on a single evaluation. I asked, then “what do you think the fear about doing something more open-ended is really about?”

Honestly, I think a lot of people who are in teaching are perfectionists and it’s an internal fear. This ideology of teaching and practice experienced at the ELE is very different than how we think [or are told] teaching should look every day. The ways we normally think about teaching create a lot of the pressure around not wanting to fail in front of colleagues, in front of teammates and in front of students. I feel like culture has a lot of pressure. We tell kids it’s okay to fail. But I don’t think adults believe it in themselves. The people I work with are phenomenal people. They’re admirable. They work hard. They’re committed. But they don’t want to fail. They’re afraid.

Eleanor, John, and Rachel never struck me as afraid. Each of them utilized the Hot curriculum in unique ways to develop lessons for their students. All of them had additional follow-up contacts with scientists from the ELE, often bringing them into their classrooms via digital conferencing technology. Each interviewee had some shift in perspective from the event that they were able to build on in unique and personal ways.
Chapter VIII

FINDINGS: THE ANN ARBOR MATHEMATICAL CURIOSITY ADVENTURE

“Stop measuring days by degree of productivity and start experiencing them by degree of presence.” (Maria Papova, 2014)

The last ELE was done in collaboration with a four-high school, 8000+-student district outside Chicago. Math performance in the district—measured by leadership through the lens of student grades—was not where the organization wanted it to be. As the district’s Teaching and Learning Coordinator, I was given the opportunity to collaborate with the four math department chairs, five instructional coaches, and one Assistant Principal of Instruction to rethink math across the district. Over the course of two years, this leadership team collaborated on a multilayered series of discussions, learning experiences, and initiatives that led to the reconceptualization of how we wanted to approach math in the district. One springboard for discussion came from The Mathematician’s Lament by secondary math teacher, professor, and author Paul Lockhart (2009). Ruminating on secondary mathematics instruction, he states:

If I had to design a mechanism for the express purpose of destroying a child’s natural curiosity and love of pattern-making, I couldn’t possibly do as good a job as is currently being done—I simply wouldn’t have the imagination to come up with the kind of senseless, soul-crushing ideas that constitute contemporary mathematics education. (p. 20)

Certainly, this is not the case for all math teachers in our buildings or across the country. This was an example of the type of text we use to push our thinking about how to make math more sensory, engaging, and inviting for students. After a long process and
considerable collective professional development, we came up with a new “why” statement for the math departments: We were going to teach math to develop “mathematical curiosity and understanding(s).”

Once this purpose was articulated, we started to develop a year of professional learning experiences that would help foster students’ and teachers’ mathematical curiosity and understandings. In a subject known at the K-12 level for its focus on right answers and singular understandings, we wanted to start focusing on a plurality of understandings in culturally relevant settings. As one part of actualizing this goal, I suggested taking a group of teachers on a mathematical curiosity adventure. I was able to utilize Title II (STEM) funding to plan an ELE in Ann Arbor, Michigan in February of 2016 in and around the University of Michigan.

The math leadership team shared an open invitation with our 70+ math teachers across the district. At the time of the invitation, I had locked up a commitment from the university’s men’s basketball team to bring us “backstage” to meet with their statisticians. A few more collaborators were arranged based on some of my contacts or cold calls. Like the IES trip to Los Angeles, the itinerary and agenda were not finalized until almost a week prior to the ELE. The preliminary line-up of collaborators was enough to entice 20 teachers (equally represented from the four high schools) to embark on what became known as the Ann Arbor Mathematical Curiosity Adventure (A2MCA).

The objectives and goals of this event were similar to those of the Climate Change in the Classroom ELE. Captured in the A2MCA program (Goble, 2016):
Figure 8.1 A2MCA Objectives

The ELE program stated the trip’s working hypothesis: “When we experience math differently, it can move us beyond our structured imaginations and push us toward new ways of engaging our students with the diverse languages of math.”

Translated to the administrative language of deliverables, we wanted teachers to meet with a wide range of professionals working with math “in the wild.” After the event, the goal was for participants to use their experience as fodder for new classroom lessons or units that would pique students’ curiosity or pique students’ curiosity through new classroom lessons as they developed mathematical understandings.

As the event designer, my goal was to engage with a diverse group of math-related professionals and contexts over the course of two days. Where the NASA event had formal time to work with scientists, this ELE was more informal. In addition to our scheduled collaboration time with these speakers, invitations for extended collaboration were made by many of our guest speakers.1

As speakers were confirmed, I e-mailed articles and videos about their work as pre-ELE resources for teachers to explore. When the line-up was complete, we met a wide range of professionals. In addition to the basketball statisticians, we were scheduled to meet with transportation and driverless car researchers at the University of Michigan.

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1Afterwards I learned that at least a quarter of the participants did end up corresponding with A2MCA presenters after the event.
Transportation Research Institute (UMTRI), a doctoral student in mathematics that was an app developer and award-winning cartoonist, an MBA student, an Islamic scholar, a math education professor, a professor of political science and economics, a biostatistician specializing in medical research, and completed the event with an extensive tour of an innovative Silicon Valley-style software development company. Like the Los Angeles and NASA events, many of the people we met in Ann Arbor were stars in their chosen field.

The two-day agenda gives a sense of the event’s scope (see Figure 10.2 on the next two pages).

All three interviewees that participated in this ELE—Craig, Kevin, and Katherine—mentioned the importance of working with peers in a unique setting. Katherine, who is approaching retirement, added to this idea saying, “Unlike professional development, when we’re around school and district office, we were able to remove ourselves from our normal work life.” Craig built on that idea. He said teaching is often an individual pursuit where

it’s easy to feel like you’re on an island. This experience was an opportunity to move beyond ourselves. There really wasn’t anybody in Ann Arbor going “I’ve got this figured out, this is a waste of my time.”

[In school] teachers. [like students], are often reminded of their deficiencies. I realize every day, I’m reaching some kids the way I would like to. [In Ann Arbor] we started to realize “okay we’re in this together.” We heard from our colleagues, “try this or try that” and it kind of goes on like this over the whole trip.

I think the experience, the energy—I call it the “aha”—was fueled by the fact that, “you know what, a lot of these people are just like me.” They all want to be teaching better. They realize that things can be done differently, might be able to be done differently. It’s healthy to go through an experience like this where you can take off your mask.
SCHEDULE

Tuesday, February 23, 2016

2:30 PM Depart Glenbards (sneak out @2:00 or 2:15 if possible). The goal is to get to MI ahead of rush-hour traffic.

SWITCH FROM CST TO EST

5:30 PM - 7:00 PM Pre-meet & greet for dinner @ The Harbor Grand • 111 West Water Street • New Buffalo, MI 49117 • 888.605.6800

9:00 PM Arrive @ Holiday Inn North Campus • 600 Plymouth Road • Ann Arbor, MI 48105 • (734) 769-9800

Wednesday, February 24, 2016

7:30 AM - 8:30 AM Continental Breakfast @ Holiday Inn (Ryan will have fruit, danishes, coffee in the lobby)

8:30 AM Board Holiday Inn shuttle to UMTRI

9:00 AM - 10:00 AM Dr. Carol A. C. Flannagan director of the University of Michigan Transportation Research Institute (UMTRI), Associate Research Scientist in UMTRI Biosciences Group, and Research Director of CREST

10:00 AM - 11:00 AM M-City tour and visit with additional UMTRI researchers.

11:00 AM Board Holiday Inn shuttle & Travel to Zingerman’s

11:30 AM - 1:30 PM Lunch @ Zingerman’s on 4th. Grad student panel on “Math in My World”


  Ali Z. Hussain Ph.D Candidate in Islamic Studies in the department of Near Eastern Studies and Huffington Post blogger

  Chiedozie Eric Okafor MBA candidate in the Stephen M. Ross School of Business and MA Candidate in Higher Education at the School of Education and founder of NELO

1:30 PM Board Holiday Inn Shuttle @ Zingerman’s return to hotel

1:45 PM - 3:30 PM Break - visit Main Street on your own and meet us at School of Ed @4PM and/or refresh @ Holiday Inn

3:30 PM Board Holiday Inn Shuttle to School of Education @ Central Campus

4:00 PM - 5:00 PM Dr. Patricio Guillermo Herbst Professor, Chair, Educational Studies School of Education; Professor, Department of Mathematics, College of Literature, Science, and the Arts @ School of Ed Browlee Brownlee room 2327, second floor south wing.

5:15 PM - 6:30 PM Dinner @ Pizza House (we will pre-order pizzas and salads)

6:30 PM - 7:30 PM Walk to to Crisler Center (if we walk will visit Law Quad Library on the way)

7:00 PM - 9:15 PM Northwestern vs. University of Michigan Men’s Basketball

9:15 PM - 10:30 PM Meet at Crisler Center "blazing tunnel" for facility tour & meeting with Pete Kahler Director of Basketball Operations & Graduate Student Data team

10:30 PM Board Holiday Inn Shuttle @ Crisler Arena
For A2MCA participants, one might assume a reasonable working relationship, because teachers all taught the same discipline in a four-high school district. This was not the case because they don’t regularly work across buildings. Katherine explained:

For me it was key to finally connect with people outside of my building. We do this a few times during the year. Here we were doing it in a totally different place, and you’re hanging out with these people. [As we traveled to] all the other buildings I got to know different teachers I had never met. I think that helped, because we weren’t just learning with the same group that we always learn with [at our buildings].

When I asked Kevin, still in the early part of his career, what made the metaphors for this learning experience so different from those more commonly associated with learning and schooling, he focused on meeting with professionals working with math in the field as something that helped him make connections:
It was just the exposure to new ways of applying mathematics to things. I could see the way like stats were used with the basketball team. I could see how quadratic functions and parabolic motion was being used to helping the basketball players shoot free throws.

When we got to Menlo [the software design company], they weren’t necessarily talking about math, they were focused on more relationships—always pairing two people, two brains working on one project at one computer and “making better mistakes.”

I was also fascinated by the biostatistician [Dr. Bhramar Mukherjee] and her work with epidemiology. Her work made me think about using a zombie virus type lesson to lead in to something like exponential growth. That’s something an algebra kid does, they do exponential growth! I talked about that when *The Walking Dead* came back on the air last week. They were like all engaged “because I was able to tie it into a frame of reference that they have that they know, now you can say, “What about if this happened for real?” or “What if you knew where patient zero was?”

Every hook that you have isn’t going to reel every single kid, but it’ll reel in2 a higher percentage of them.

Craig said the ELE “was like trying on glasses when you need them, but did not think you did, and seeing so much more clearly than you did before.” Craig seemed like someone that saw math everywhere before this event. It is hard to overstate how excited he was during our interview about multiple math connections. He riffed on home building, population trends, and microphone feedback—just some of the examples he used to illustrate the possibilities for engaging with math. He said,

When you open your eyes, you see so many daily examples of math. I enjoy catching a headline, diving in, and looking for mathematical connections. Currently the country anticipates landfall of Hurricane Irma, what’s the path? Where would the most impact be? What would the force be? What factors affect the trajectory?

Like Katherine and Carol Flannagan, Craig was always seeing mathematical pictures in his mind. What was different about this ELE beyond having the chance to collaborate with his peer group? He explained:

2Note the fishing/animal metaphor for students—a common turn of phrase when teachers discuss engagement.
First, the expertise of the speakers. Each speaker came along, and they were kind of like “hey, let’s go. Let’s keep it up.” To hear that one guy [complex systems theorist Scott Page] I felt like he [had such incredible expertise] that he could take the complicated content and go, “really, it’s just this.” I think that’s an impressive skill.

To interact with variety of people in different fields talking about the value of mathematics, that buoys you to realize that we need to communicate this idea to kids.

Craig also coached youth basketball for almost three decades. He was reflective about meeting with the basketball analytics team:

I love basketball, so to hear people talk about how they take a game that I coached and then have all this data, and you see these bells and whistles in this environment and you’re like “yeah, this does inform their decision making.”

The second reason Craig gave to explain what made the ELE different had to do with “being there.”

It is like I always know the stars are out there. When the solar eclipse happened, I was able to put those glasses on and I’m like “Wow!”

We were right there. We heard [people at M-City, the university’s faux city and car track for testing driverless cars] talk about the [driverless] car research. I saw in the news that Domino’s Pizza [based in Ann Arbor] has put driverless cars into action in the last month. I’m a part of that, even if I had nothing to do [with researching driverless cars], I got to ride around in a car in their fake [driverless car testing] town. It’s more than just me grabbing a headline to use in class—I was there.

Craig also noted limitations in relation to classroom teaching. Again reflecting on the driverless car research being done at M-City:

What are the mathematics, the analytics that’s required to get this car to operate without a driver? There’s all little pieces [of math] there. When you scale them down, and down, and way down, maybe they get to what I’m teaching my kids, but it’s there. What we got to see was all those pieces embedded together at M-City.

Katherine is almost universally regarded by her colleagues as one of the best math teachers in the district. For her, meeting professionals—especially our first speaker, Dr. Carol Flannagan, an Associate Research Scientist at the University of Michigan
Transportation Research Institute (UMTRI) - made an impression. She started out by saying, “I love Math because it makes beautiful pictures on my mind.” From here she shared her personal journey as a mathematician and a researcher. She connected with Dr. Flannagan’s story:

I was like, “Oh my gosh, not only is she my age and my gender and gone through all the things that I did when I went through the collegiate level.”

I was pre-law when I started [undergraduate school at another Big Ten university]. I just kind of fell into math. Which is funny because I was counseled out of the discipline, even though I had a perfect SAT score in math. Because I was a female I was told to be a teacher or told to go into law. [Carol] was also counseled out of math. Now she’s in a very different place than I am. But our younger years were very similar.

It was really difficult to be the only female in upper level math courses in high school and at the college. It blows me away when you look at my abilities in math as a young girl, that I would ever have been counseled out of it. I should have been in engineering. My brother didn’t have the grades and scores I did but everyone told him to go into engineering.

I lived through [the same story as Dr. Flannagan]. I understand what it feels like to have prejudice against you. Being a Math student at [my university] was difficult but so was being a math teacher at [the first high school I taught at]. [The male teachers] assumed I couldn’t do math, because I was a woman. I was the only female math teacher until [a new department chair] came in and started hiring more women. When I speak with my younger colleagues, they don’t understand what I’m talking about.

Dr. Flannagan shared her personal story then began talking about her research on automobile safety and driverless cars. Katherine felt:

Everything [Flannagan] was saying just struck home. To the point where I couldn’t even say anything to her, I couldn’t be like, “Wow, you really made everything click for me.” I almost wish I could see her again and say, “You know everything you said made a huge change for me in my life.” I did email her, and I wrote her a thank you, but I remember just as I sat there in that little room and listened. Afterwards we went on the [driverless car testing] course and checked it all out. At that time, I remember thinking, “Wow, it’s been so long since I have had that kind of a good wake-up call by somebody to ask myself ‘What more I could do in my classroom?’”
It is worth noting we visited Ann Arbor in the middle of a blizzard. The K-12 schools closed for at least one of the days we were in town. The University remained open. When we were driven around M-City, there was minimal visibility, but our hosts were still excited to take us for van ride on the test track. Katherine ended up communicating with Carole after our learning event to develop some lessons using data sets she shared during her presentation.

The storm made each stop on the adventure a logistical challenge. It also cut down some of the time we planned for our group of teachers to have discussion and reflection. Even with a snowstorm conspiring to make us tardy for almost every event, Katherine never mentioned the weather; she was focused on the connections she made:

As we went through different people, I pulled other things. Being at the basketball game was wonderful. But being [in the team’s film room] and listening to what those guys do with those analytics, that opened up a whole another thing for me. I didn’t have a clear understanding of how math has changed at the collegiate level. I was a calculus child ... [at that time] nobody was doing stats. Stats was like an extra little class you took in college, it wasn’t considered that important.

And then to see it in all of those fields. [That got me] really keyed in. Then it was like, “Okay, now I’ve got to watch Moneyball, and I’ve got to learn about this, and I got to see where my kids could use stats.” I realized immediately, that I had to quit just recommending kids for [AP] calc. That there’s this whole huge field [stats], that high school Math teachers aren’t as aware of as they should be. That was huge for me.

Kevin had a similar experience. He teaches high school calculus. Connecting with calculus professor Olivia Walch (also a researcher, award-winning comic artist, and app developer) was something he talked about. Olivia joined us for the basketball game and our visit to Menlo. At some point during the adventure, Kevin and Olivia bonded over their shared subject matter and teaching methods. They talked quite a bit after that trip and then into the summer. We traded ideas and lesson plans back and forth—tweaking stuff. I never have had access to a college professor like that. I was like, “So, I’m doing this in my class.”

She’s like, “Well, have you thought about teaching it like this?”
I was like, “No … that’s amazing.”

When I was doing math modeling I told her about of my final exam where I asked my stats students to figure out how to break Vegas. She was like, “I think I’m going to do that for my stats kids in college!”

In addition to these interpersonal factors, there was something about being in a college town that resonated with all three interviewees. Katherine talked about being at the University of Michigan:

As soon as we got there, I felt a change. Just being at the campus. But then all of the people that we listened to—I found deep joy in being back in academia.

I followed up this statement, saying, “Wouldn’t it be the same though if we all traveled to a national conference at on the University of Texas campus?” Katherine replied:

At a national conference you’re just going from room to room doing different breakouts. Sometimes you pull things from those breakouts. But it’s not like going into where things are happening. We went to the basketball arena, to the team’s film room, locker rooms and practice court. We were at M-City and watched all the research happen, talked to the people as they’re working. It was very hands-on, and you don’t get that at a national conference. At those events you get people like me, giving their spiel, “This is what I do in my room, isn’t it great?” We’ve all done conferences and breakouts here and breakouts there. Don’t get me wrong, they’re nice and you can get some things from them. But that’s just another classroom environment to me. What we did up in Michigan wasn’t that—it was way outside that box.

[The ELE made you] see things in a different way than we do when we have to get kids through all of these [district mandated learning] targets. I love going to professional learning development for cooperative learning and I draw from that, because I get things I can use in my classroom the next day. Whereas [this trip] made me start thinking, “Okay, I’ve gotta change a little bit of my thinking here.”

After the interviewees reflected on what made the event different for them in relation to the common experiences of learning and schooling, I asked about the structure of the ELE. I wanted to know what moves did or didn’t help them engage. Kevin said:
It wasn’t like you sitting in a dark auditorium talking to somebody. We’re were always at a table [with the speakers] having a conversation about what they do every day. You just had access to people in different field. [The speakers] were receptive to wanted to talk. They were all like, “Oh my God, people never come and just talk to me about what I’m doing. I love this.”

I think that’s something lost in ordinary PD [professional development]. If you taught students like the way PD is often done, you would get the worst evaluation ever. That’s the way PD is presented to teachers. I get that [administrators and school leaders] are trying to get a whole lot of people the same information all at once. There should be more opportunities to be able to be venture out of the norm or to do things like this. I just feel like teachers don’t get enough time to have experiences like this.

This was by far the best most practical PD that I have gone to. [Over a year later] I’ll still talk about this trip to everybody.

Kevin went further. He thought the ELE metaphors were so different because this kind of learning experience is probably secretly what teachers want to do in their classrooms. [The A2MCA] is like their dream scenario for being able to present students with opportunities to be able to delve into a topic and just pick it apart or whatever then not have any regard for time or resources or anything like that. Just being able to be fully engaged in something. To dive into something that really interests you. I feel like teachers want to be able to provide opportunities like that for their students.

Katherine responded to the same question:

I think it was just a convergence of many things. Being someplace different, being at an incredible campus, listening to some of the most intelligent people I’ve heard in a long time talk about Mathematics and how they use it. The [open-ended nature of this ELE] reminded me to “not to restrict [curriculum], [but] to open it up.”

While Craig also had positive reflections on the ELE, he had some counterpoints to Katherine and Kevin’s desire to open up their math curriculum. He saw value in more linear types of teaching built around learning progressions (as is often the tradition of elementary and secondary math textbooks):

I think sometimes we fight step one, step two, step three, but in the long run some of those principles are there because they actually create a framework for us to learn in a healthy way. You build up the confidence as you remember step one, step two, step three, step four.
A friend of mine told me about his son’s freshman basketball coach. This guy made every practice three hours long. Every practice they did the same thing for the first ten minutes, the next ten minutes, the next ten minutes. This guy was old school, old school. The last practice before the last game, same thing, every time.

What do those kids remember? This guy’s son loved it. There is an element I think in learning, which is hard to appreciate when you’re 14 and 15, and it’s hard to appreciate if you’re sitting there and you’re disinterested in the topic. You can’t always provide what they want versus what they need.

Viewed from the lens of Gendlin, this type of experience does not seem likely to be perceived as reaching the higher stages of the EXP scale. It does, however, raise some important reminders about how learning in general, and classes specifically, cannot always be in ELE mode. Craig used this anecdote as a springboard to reflect the intense routine of these basketball practices in relation to classroom teaching.

The summer after the ELE Craig was flying into the United Kingdom and noticed all the windfarms. He was curious about the math it needed to figure out how much wind power would be needed to replace traditional energy sources and what kind of income they would generate. We exchanged a few e-mails in relation to this math content. He used these ideas to start building a lesson. He introduced the topic to the class and “right away you get kids rolling around saying ‘Oh, this isn’t math, we are off the subject.’”

I’m like, “This is not off the subject, this is the subject. Why are they doing this? How much money is it going to generate? That’s just one big math problem.”

I would be content with doing the wind turbine project for a week. I didn’t do that. Implementing [a lesson like that] is not easy and it’s also not something that can be done every day, because sometimes you just got to plow the field. When hear how some students perceive the drudgery of school, sometimes I’m like “farmers don’t have flowers popping up every day.” That doesn’t sound very glamorous, but that’s what it is. I don’t think that’s throwing up my hands up in a poor effort.

This farming metaphor is true in the sense that every day can’t be extraordinary or high EXP. There will always be fields to plow in before the harvest. There is always a
range of work necessary to learning. Keeping that in mind, ELEs are designed to counter (or ideally balance) dominant learning experiences that feel more like perpetual field plowing or garden tending, where harvests and flowers are rare and we forget to “stop and smell the roses.”

Kevin didn’t necessarily try to tackle any project in particular but had takeaways about skills that would be important in any setting that used math.

A lot of my thinking started to really shift when I went to Ann Arbor because I saw so many instances of people being able to speak about mathematics. That came up at M-City. They have a lot of bright undergraduate students that apply to be interns. The ones that don’t know how to articulate ideas that they have, they don’t make the cut.

This came up at Menlo too. [Their employees] had to be able to not only articulate what they were doing mathematically but also to articulate it so somebody who didn’t have that same frame of reference so they could understand what they were saying.

My students could do mathematics, but it was hard for them to articulate their knowledge.

Now, I talk to students differently. In the past I might have just asked them, “Well, okay, what type of a function is, this is an exponential function?” “What is that piece? That’s the base. What does that mean?”

Now I might ask, “What does this rate of change look like?”

My kids say, “You are multiplying, or something is doubling.”

“Okay, how do you show that mathematically? What does doubling mean mathematically?”

“Were you’re multiplying something by two over and over and over and over and over?”

I’m like, “Okay, how could you take that now and represent that instead of you doing all the repeated multiplication? How can you show that in one equation so you don’t have to keep doing the same repetitive thing over and over, over and over, over and over? How can you condense this into one mathematical idea?”
That’s the thing that’s been paying off for me because I’m not teaching my kids these rote formulas that they remember for a test or a quiz. [I’ve also] been stressing the mistakes a lot.

I’ll often show a bunch of different students’ answers [to a problem] to the class. One day when I did this a student that never talks was like, “Ooh, Mr. Hardy, I know what happened right here … and you’re using my problem!”

Most kids they don’t like to own a mistake. She was like, “I should have multiplied instead of adding because when you add the differences between yourself that’s linear because the change is constant but I’m multiplying it and I have a constant rate of change, I’m just constantly multiplying stuff but I’m not adding the same number of things to it.”

I was like, “holy s*#!” in my head but said, “So we’re done.” Out of that, you could see a bunch perked up thinking, “Oh yeah, she’s right.”

Giving the kids space and time to work through ideas has been helpful. Now they understand that mistakes are okay and part of learning.

Kevin also explained why these shifts can be challenging in the schools. He felt that teachers feel so pigeonholed and stressed due to time constraints, required targets, district initiatives. Teachers feel like they have to get through so much as opposed to focusing on the important things. I still feel that way. The things I’m doing in algebra, I’m not doing in my calculus class because I have the A.P. test that I have to prepare my students for. There is material that I have to get through. What I’ve done in that class though to compensate for that is allow collaborative piece to be a bigger part of what I do in AP.

Katherine, as one might expect from her earlier story, took different approach. She said, “I’m pretty good at making kids think outside the box, but I’m not sure I did as well bringing the real world into my classroom as much as I should.” She had done some interesting application projects in the past, but there was usually a pre-determined set of answers. Immediately after the ELE, she brought some of the crash data in that were shared at M-City and UMTRI to students for exploration. These data were used for students to practice making hypotheses with “real world” data. Once they generated these ideas, the data were used to support conclusions. Using this established (but “real world”) data set was a springboard to a project where students could develop
their own hypothesis and conclusion from something that they were interested in. They could either use existing data sets or go online and create their own surveys and collect data and make analysis about it.

It was really hard because you had to work with each and every kid as to whether their hypothesis was viable. You’d have to ask them if they were going to be able to get the kind of data they needed? We talked a lot about how you go about getting good data. How do you analyze the good data? [The project is in its second year] and we tweak it every time we do it. It is by far the thing the kids love the most about second semester in my class.

I had a girl last year, who wanted to look at the Bechdel Test,3 for movies. She thought if a movie failed the Bechdel Test would it gross more at the box office?

I was sure she was going to be right, because I figured the highest grossing movies would fail the great Bechdel Test. Didn’t happen that way. It was all over the place. I was like, “Isn’t that interesting?”

[After looking through her data set] she gets to write it up and draw her own conclusions. The kids like the fact that they can look at their data and draw conclusions from it. [They also like] looking at each other's stats and seeing if they agreed.

It’s one of those things where as long as they do the work, they’re getting the points. It’s not like a math test where it’s right or wrong. Instead, you’re interested in X, Y or Z. That’s what you’re researching. It creates a lot more work for me to do it that way, but it’s so much richer for my kids.

Then what I found is that kids were like seeing things in the newspaper, and they would be like, “That’s bad data, look at how they did that, look at the conclusion they drew from that.”

Craig, Kevin, and Katherine each had different responses to and reflections on the ELE, but Craig captured the memory, saying, “We did something with 19 other people … something that nobody else has really gotten to do with people that are kind of just like me.” He thought it was like a professional vacation, but Craig was acutely aware that “you can’t always be on vacation, but always love a new adventure.”

3The Bechdel Test is named after the comic author Alison Bechdel. It is a simple test designed to help one figure out the type and prominence of female roles in movies. It names the following three criteria to assess a film (1) Does the film have at least two women in it, (2) who talk to each other, (3) about something besides a man?
Chapter XI
DISCUSSION

“Well, here’s another nice mess you’ve gotten me into.”
(Laurel & Hardy in their 1930 short “Another Fine Mess”)

Presence, Absence, and Emergence

The preceding narratives were constructed to bring readers into each ELE with minimal editorial. The goal of each story was to allow us to get a sense of what people perceived as happening, how it happened, and for whom. So now, we are left with the largest question: Why did these things happen? What are we to make of Malik’s mythic perceptions, Eleanor’s identification with climate scientists’ expertise being ignored, Katherine’s connection with Carol, or any of the other of the stories and metaphors shared by the participants in this inquiry? Presented side by side, the three ELE narratives became a polyphonic story space filled with diachronic and synchronic data. Voices from three ELEs merged into dialogue with each other. As explained by Gordon, McKibbon, Vasudevan, and Vinz (2007):

Narrative is a way of seeking camaraderie but not consensus….The narrative provides us with sites and spaces to reflect on our work. The stories arise from a real task of trying to understand, name, and disrupt the work. As multifaceted and socially constructed provocations, stories provide us with a field of data to cultivate. (p. 349)

Before sharing ideas and impressions about this work, caveats about what is present and absent are required. While each interviewee had an opportunity to refine their
ideas over multiple drafts, the larger narrative was still constructed from a position of privilege. As the author and narrator of the inquiry, I retain what folks in Hollywood refer to as the “final cut”… at least for this version of events. Like the famous Kurosawa film Rashomon (1950), the ELE narratives are just three versions of what might have been hundreds of possible narratives that could have been constructed from the questionnaires and subsequent interviews.

Some of the interviews occurred 17 years after the ELE, while others were just a year and a half after the event. This distance between the experience and the interviews requires the consideration of memory. As stated by Susan Engel (1999) in her book, Context is Everything: The Nature of Memory:

We constantly revise our own recollections in response to what others think and say and feel. We also borrow recollections as a way of feeling that we know what has happened in the past. In this sense memory is at once the most deeply personal and private aspect of experience and simultaneously the means by which we extend ourselves beyond our own mental boundaries. (p. 169)

Because of the time elapsed since some of the ELEs, the events themselves extend beyond their original mental and temporal boundaries, which can be seen as both a strength and weakness of the inquiry. The most dramatic example of this as a strength came from the IES interviewees. They continually used phrases like “my 16-year-old self” and “knowing then what I know now”—their ELE memories were given the additional context of a life lived. The weakness would be that most of their “in the moment” impressions were not captured. Still, like wine or cheese, there is a case to be made that memories of the ELEs became more refined with age. Malik coined the word “full-ment” to describe this process:

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1Recall, there were some journals and video from IES in 2001 and surveys from every participant done immediately after the NASA and Ann Arbor ELEs.
Something has to full-ment before it ferments. That experience of IES had to almost grow inside of me, engaging, contending with my life, everything that I went through before I could really understand and digest it. Here time allowed the experience to develop additional context. Malik also hints at the deeply personal nature of the memories for the participants.

These present memories must be considered in the context of all that is absent. This inquiry was never about capturing a totalizing whole—even if that was possible. Forty out of 70 participants responded to the initial questionnaire (one chose not to participate). Perhaps some of these ELE participants that chose or were unable to take part in the inquiry did not have rich or positive experiences, or perhaps they did—those stories remain outside the frame of this work.

One example is the student from IES who was storied in another student’s journal as saying—in a negative tone—“This trip was not what I expected” after meeting Robin Williams. This person started the questionnaire and never finished. Was it because their job was hectic? Were they too busy to respond because of their family commitments? Were they unwilling or uninterested to reflect on their 16-year-old self? Perhaps there was no interest in revisiting IES because it was a challenging experience? Did I frustrate this student at the time and they didn’t want to offend me by telling me that? It is likely we will never know, but it is still important to consider the absence of these stories.

Those are just some of the stories that were not collected, the stories I did not hear, and the variables I cannot change. They all stand as a reminder that what follows is provisional and subject to further interrogation. On the flipside, the narratives that were constructed are a rich and generative field of data that may lead to further inquiry and discussion. What follows are not so much “findings” or “conclusions” but observations of camaraderie and convergence in the conversations.
Metaphorically Speaking

Metaphors were a useful tool for this inquiry to open dialogue about the ELEs. As articulated by Sullivan and Rees (2008), metaphors allowed information about ELEs to be condensed into more workable ideas. They made experiences and feelings that may have become more abstract with time accessible through metaphor. These responses opened up new ways of seeing and thinking about the structures of schools and ELEs.

The most conspicuous theme in the data was the difference between the metaphors participants used to describe ELEs in comparison to those used to describe traditional schooling. When interviewees were asked how they thought most students would describe school, they all emerged as aligned with dominant metaphors of school presented in Chapter VII. Their ELE metaphors were in opposition to the dominant metaphors of school.

One response in particular stood out when George—a successful adult by any metric—described what high school was like for him:

[High school] is kind of like a prison yard.2 In the prison there are gangs. And you know the gangs are over in different areas and they just do whatever they’re doing; work out, lift weights. They don’t interact with each other. And if you’re not in any of them, they’re all going to appear menacing or threatening on some level.

I found this metaphor striking, disturbing, and deeply saddening. I knew George as a bright and vibrant teenager who found ways to engage in learning. It was surprising all those years later to imagine him feeling (as a teenager) like an extra in some ultraviolent prison movie. He felt this way in a diverse high school located in a college town that—by all the established metrics—was “high performing.” Never mind all the other prevalent metaphors presented earlier in the inquiry. George’s description alone should make any

2For the record, his metaphor is not informed by actual prison stays, but our construct of them in the movies.
parent, teacher, administrator, or policymaker more carefully consider the kinds of cultural formations created in some of our schools.

Interviewees’ ELE metaphors contrasted to the more fixed, closed, and constrained metaphors that are common in schools. ELE metaphors were more open, organic, energetic, and exploratory. The difference was striking and a rich point of inquiry. Each interview began with these broad questions about what public school systems value and what they are “like” for most students.

At first, I thought the metaphors for traditional schools might simply be more closed and constraining, while ELE metaphors would be more open and dynamic. This still holds true, but it seemed like more of the metaphorical differences were captured by the idea of a continuum that moved from fixed to more fluid metaphors.

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<th>TRADITIONAL SCHOOL</th>
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<td>(Complexity of Rules – If/Possibilities)</td>
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Figure 9.1. Metaphorical Continuum

Fixed conceptions of schools, teaching, and learning are suggested by metaphors that are dominant in relation to traditional schooling. Economic, military, and zoomorphic metaphors (to name a few) focus on contained and controllable inputs and
outputs. These are contrasted by more fluid metaphors about ELEs. As one example, an IES student perceived her experience in California as being like a time bend. We saw a glimpse of the future, a time after college, when all doors really would be open. Nearly everyone we met had forged a different path. No one’s career was ready made. It was sobering in that respect. While we were there, high school felt distant, past, irrelevant. The future seemed present and full of possibility.

This metaphor is not monolithic, but multiple. A bend implies movement and a non-linear experience. There are many open doors and multiple pathways that are possible. There is not the proverbial “road to success” but “roads.”

John (the NASA ELE participant) suggested gentler metaphors for traditional school:

Public schooling is a tool acquisition activity. Perhaps if people are thinking from a practical sense like, “This is what I need in order to do the next thing in my life, no matter what that is.” I think sometimes it’s narrow and kind of self-centered around their own achievement. It’s like shopping at Home Depot.

This economic metaphor for school focuses on consumption. Learning is acquired to prepare for “the next thing.” In policy this next thing is often called career and college readiness. Unlike our extremely fixed (and deeply constrained) prison metaphor, Home Depot is a large store with clear pathways. Most people go there for a specific project to complete a specific goal and navigate the store for that purpose. If one goes there to find a new light fixture, the garden center exists, but I would ignore it because of my narrow purpose. On the other hand, shopping at Home Depot, one is not completely fixed and confined. This metaphor does not suggest a fully student-centered classroom, but it does give student agency within parameters. To extend the metaphor a bit, the learner is enclosed and limited to fixed aisles and a fixed inventory. A learner’s main resource is purchasing power. Tools are acquired to prepare for the future. This metaphor is certainly more fluid than a prison, boot camp, or cows being herded (as mentioned by Kevin and
Jane) but is not as open as “a time bend” or another ELE descriptor, which was “a trip to Disney World.”

The Disney and Home Depot metaphors are an interesting contrast. Disney is also a place for consumption, but much larger than Home Depot and not contained in the same way. Home Depot is shielded from the outside environment by a single large warehouse; Disney World is a series of sprawling outdoor spaces, some contained, some not. Both Home Depot and Disney can be seen as systems, but Disney is a larger, more open system with less predictable possibilities. Like Home Depot, Disney is a place of consumption, but the purpose is generally for personal pleasure, not something as utilitarian as fixing a toilet or updating a kitchen. Generally, the production related to Home Depot is more fixed than the emotional outcomes of a theme park visit. The remainder of the Disney ELE metaphor gives additional data: “going to Disney World because it was exciting, exhausting, and we still talk about it fondly today.” Disney (and by proxy the ELE) was a place where energy is put toward something fun and thrilling. Positive memories are an important product of the experience. A Disney learning experience would be more focused on enjoyment, whereas the Home Depot one is focused on utility.

The Disney metaphor also presents some interpretative challenges that can apply to nearly any metaphor. Lakoff (2003, 2006) is quick to remind us of the multiplicity of metaphoric language. One of his famous examples is “it’s all downhill from here.” This can mean that things are going to get worse. He links this to the “good is up, bad is down” frame. But this downhill could also mean things are going to get easier. Here, too, Disney could have a very positive connotation to explain the ELE (this respondent’s questionnaire suggested that was the case), but it could also be about a staged experience that felt contrived and artificial à la the countries recreated around Epcot Center. This all depends on the conceptual frames one applies. Either way, Disney is less fixed than
Home Depot, a factory, or a prison. It is already possible to see that ideas of what is fixed and what is fluid require a multi-dimensional consideration when talking about ELEs.

Rachel’s metaphor for the NASA ELE foregrounds the need to explore the larger question of what is fixed and what is fluid. She felt the ELE was like planting a seed that will grow because I’ve got more information to help it grow now. But when you take and move yourself out of a place and you get more information, you gotta have some kind of medium to grow it in. Just because I know about climate change doesn’t mean that I can actually teach it. I feel like I need the medium. I need the materials, I need the experience of working with other people in order to see how that’s gonna work in my classroom.

At first, a seed can be thought of as fixed in a single place. On the other hand, her metaphor explores interactions between the seed and the medium. A seed changes shape and form. It expands in space based on its interactions with the environment. Assuming the seed is not in a greenhouse, its growth occurs in a large, open, interactive, and somewhat unpredictable ecosystem. This converged with Ada’s journal from IES and its focus on

the environment in the class [which] has taught me about dealing with different types of relationships in a setting where group work and cooperation take the number one priority. In a situation where your success depends on the success of the group you quickly learn that being independent doesn’t mean being isolated.

Ada also had a more ecological view of the learning process. She was referring to the importance of interactions over the course of an entire year of class related to an ELE, while Rachel was talking about a one-day ELE where there was follow-up work. They were both talking about organic and complex systems where the fluidity and complexity of interactions created interdependencies. The fluidity of Rachel’s metaphor comes in to relief when contrasted with Malik’s idea of traditional school as “plastic flowers. I know this will sound harsh—it looks the part, but it’s dead. There is no spirit inside. There are no real thriving movements—it’s like a body in formaldehyde.” Even though a seed might be planted in a fixed location, it spreads and changes—a process, movement, and
interactions occur in a larger ecosystem. By contrast, Malik’s plastic flower is not only fixed but totally predictable and not subject to any internal growth; the only interaction that might move the plastic flower is an external force.

This suggests that we need to think about the whole range of ELE variables as related to place, space, time, and rhythm. As was the case with the NASA ELE, the location was fixed—mirrored by Rachel’s seed comparison. But once one considers these other variables, it becomes a learning experience in motion. The NASA ELE was held in a professional place that none of these teachers had experienced before. Every office, hallway, and room offered up new curiosities. The space was used in an open way; although we were on a single floor of a building, there was not one classroom, but a series of rooms and offices teachers explored and used as needed. Time shifted away from the highly artificial, bell-based (one might say Pavlovian) structure of a school. While time windows and breaks were scheduled, a new rhythm was created by all the people working together in the space. In some cases, scientists moved in and out of working groups based on professional responsibilities they had to deal with during the day. Teams and groupings also shifted during the course of the day. One can’t underestimate the new rhythms that seem essential to ELEs.

On a recent New York City-based ELE (that was not a part of this study), one teacher remarked to me that he had never seen me move so fast. I told him that I quickly “went native,” moving at my Manhattan rhythm instead of my usual suburban beat. John’s IES story resonates with this idea as it relates to the Southern California experience:

We had a schedule, an itinerary to follow, but it wasn’t the same. Sometimes we had to get up earlier than others…. The trip was just so much different than what I was accustomed to at that point in my life. Growing up, I had a really uptight family. Everybody is uptight. And [here in Southern California] is that whole West Coast vibe of everything’s more chill. It’s all relative, but I really enjoyed experiencing that there.
It is hard to measure these shifts in place, space, time, and rhythm, but ELEs become fluid in ways that the best inquiry-based classroom might not be able to. This does not mean that classroom-based experiences cannot be fluid and exhibit high EXP stages. ELEs simply allow more variables to become unmoored, allowing for more emergent possibilities.

In all of the ELEs, participants would meet professionals (or in some cases celebrities) for short presentations followed by Q&A. On the surface, this could seem as fixed as a “sit and get” classroom. That is true on some levels, but like a seed planted in what we often call “nature,” many fluid variables surrounded each meeting. While presenters might know about our purpose for the ELE, they are not given learning targets or key points. Participants might do pre-reading about a speaker or a project they were involved in, but like any spontaneous encounter, one does not know what will be said or what should be asked. In many cases, these Q&A’s take place “in the wild.” That is to say, ELEs take participants out into the field and interact with people in unique settings, whether it is a movie set, basketball locker room, a writer’s loft, or an office space.

Again, the environment and cultural formations surrounding these encounters usually shift during the course of the ELE and acquiesce to the rhythms of the event. During the IES ELE we meet the director Spike Jonze on the set of his film *Adaptation*, I recall he was talking to us from his director’s chair while a car crash sense was filmed. He spoke to us in spurts, running back and forth to work with his crew. He set the rhythm of the conversation. Even though we met Robin Williams in a fixed space, mystery and uncertainty surrounded the meeting. Recall Jane describing the meeting:

> then going into this bizarre situation where we’re walking through the kitchen [of Coppola’s restaurant] and getting in what I remember in my head as a coffin elevator and I don’t know what’s going to happen when [it opens on the top floor]. It opens and we had this once in a lifetime experience to sit down with an incredibly huge superstar that was totally normal.
From the ELE participant’s point-of-view, very little about this meeting was predetermined or fixed.

Also, the learning goals of ELEs were more open than the type of learning objectives seen in most traditional classrooms. In comparison to the type of field trip students or adults might experience in schools, ELEs are not designed to learn deeply specific things. When a class visits the Metropolitan Museum of Art in New York, they might be focused on learning specific things about Roman and Greek history, or teachers might visit the Shedd Aquarium in Chicago with a focus on understanding the habitats of penguins. ELEs would embrace these types of understandings, but the learning goals are open and allow each participant to think about the experience in relation to personal goals and interests or ideas that emerge from various interactions or the larger group.

The larger point of discussing exemplary metaphors is to note that ELE metaphors are not completely fluid and open. But they are more fluid, more open, and more subject to improvisation than the dominant metaphors used to think and talk about traditional schools. The ELE design—because it moves outside of the traditional school and classroom structure—allows more variables to come into play—especially those of space, place, time, and rhythm, which are not as easy to manipulate in a single classroom.

The contrast of fixedness and fluidity gives the inquiry a larger frame to explore what happened for the participants in these ELEs. Sullivan and Rees (2008) remind us that “someone’s metaphor for an experience has a similar structure to the experience that it represents” (p. 21). These data suggest a need for a closer look at what was could have been perceived as fluid for ELE participants.

**Framing Reality**

Every interviewee said something to the effect of the ELE being more linked to the “real world” or, in the case of the NASA ELE, “real science.” For the IES participants,
Malik talked about Derrida’s idea of the “real” future or the future (to come) that is totally unexpected. Some IES interviewees said:

John: It prepares you for things that could happen in real life that are unexpected…. It helped me take the abstract of education and combine it with real life application.

Jane: I remember it just being this mystery and an adventure … that element of surprise [when we met Robin Williams], was so real for us.

Jack: I saw way beyond the realm of public education, to a form of education where you educate yourself through experience in the real world. I loved it so much.

John went further talking about how the ELE did have an itinerary to follow, but it was [never] the same…. Sometimes growing into an adult requires getting yourself out of some artificially created life routine. It prepares you for things that could happen in real life that are unexpected.

This concept of “real-ness” flowed through all the ELE interviews. In the NASA interviews, Rachel said that the scientists at NASA where working hard “to change people’s perceptions on things by fighting for real science.” I asked her what made their science more real than what is presented in textbooks, and she said:

Maybe [the way science was presented to me at the ELE] just made more sense to me. It was different because it didn’t have that formula, you know what I mean? Like, if you do A, you’ll get B; if you do B, you’ll get C. This was more open-ended than that.

Rachel makes a direct link to something perceived as real to the open-ended nature of the ELE.

A similar tension surfaced with Katherine, who said her experience in Ann Arbor shifted her self-perception. She remarked, “I’m pretty good at making kids think outside the box, but I’m not sure I did as well bringing the real world into my classroom as much as I should.” This will be discussed further toward the end of the chapter, but this
encounter with what we might call a “real-er” world was a factor in developing more fluid learning experience for her students.

Factually, being in a traditional classroom is no more or less “real world” than visiting a movie set. It is an existing location with people, but a reasonable assumption can be made that when ELE participants are talking about something being “real,” it has more do with an experience that values fluidity, openness, not-knowing, and a mess. NASA ELE participant Rachel was adamant about the fact that “life is really messy.” She shared an anecdote:

The whole idea of classroom management is so important in order for learning to be ... to occur. Well, yes and no. When I first [started teaching at this school], I was observed by the principal. The first thing he said to me was “Your classroom is loud. It’s noisy. Nobody looks like they’re doing what they’re supposed to be doing. But when I walked around, and they were working in groups, they knew what they were talking about. They knew what they were supposed to get done. And they were being successful.”

Here Rachel’s ideas of management as it should be aligns with “technologies and ideologies of audit cultures” (Apple, 2014, p. xx) so common to neoliberal school settings. “Doing school” often means orderly, clear, and clean classroom management where students are “under control.” If that was not the expectation, the principal would not have needed to give feedback with the caveat (paraphrased here) of “nobody looks like they’re learning, but they seem to be learning.” Learning in schools is often perceived as fixed and predictable. John also said participating in the NASA ELE made him want to teach in ways where you “give [students] less, and they come up with more. They figure out what kind of data to collect, they figure out what kind of graph to make. They figure out how to interpret the line. I think the messiness and the sloppiness is valuable.” This idea of messiness and spontaneity gets at the complexity of not-knowing. Educators need not become a Buddhist monks to be concerned with not knowing. Vinz (1997) reminds us that not-knowing is paradoxically easier and harder:
To *not-know* is to acknowledge ambiguity and uncertainty—dis-positioning from the belief that teachers should know or be able to lead or construct unambiguous journeys toward knowledge. To *not-know* the classroom and the learning and teaching that will take place there is to admit vulnerability… events in the classroom cannot be tamed—one leads to others and each one singly is demonstrably incoherent and irrational in terms of really *knowing*. Attempts to know what will often fall away like shattering glass or the echo of a cry—as fragments of knowing and *not-knowing* and *un-knowing*. (p. 139)

Teachers or students in a more traditional neo-liberal school setting need to deliver fixed learning outcomes. In reference to the IES ELE, Jane’s interview repeatedly mentioned this state of flux: “We were in it, and even leading up to going to LA, we still didn’t know what that was going to be.”

During the ELE, suddenly the unknown has value. In one case, the acknowledgment of not-knowing was cause to develop trust and respect. John said,

> There were plenty of times when [scientists] said to us, “I don’t know that, but I know where I can get the answer. Someone else covers that topic.” It was humanizing to see, “My gosh. You’re super smart, but you don’t know that, but you’re connected enough that you can find that, and that’s what makes you super smart.” It’s almost circular. You don’t have all the answers, but understanding you don’t have all the answers is part of being super smart. I was impressed by their humanness and also their limits of their knowledge.

In the normal cultural formations of secondary school, the teacher is often constructed as an expert who should know all the answers.

These perceptual shifts from artificial and fake to real, from managed to engaged learning, and from knowing to not-knowing move the inquiry away from the single person as an analytic unit. Henrique et al. (1998) express the need to move beyond the intersubjective and the importance of moving beyond the “concept of individual-social dualism which act as obstacles to a theorization of subjectivity which start with the recognition that it is a socially constituted product” (p. 24). To examine the ELEs beyond that binary, it is important to consider the larger construction of concepts and categories.
Varenne and McDermott’s (1998) research presents a strong model for this concept in educational settings. In *Successful Failure*, they state that focusing attention on the person as an analytic unit as well as a moral center impoverishes analyses of social process by offering new qualities of persons as explanations of their fate. This kind of analysis may appear social, but it hides every more completely the interactional processes that construct social differentiations in history. (p. 213)

In a chapter titled “Adam, Adam, Adam, and Adam: The Cultural Construction of Learning Disability,” Here they move from the social conceptualization to look at shifting cultural formations. Adam’s learning disability\(^3\) is revealed in some contexts but vanishes in others. In less constrained and institutional settings, Adam was perceived as a very talented storyteller and skilled at socializing with other students. Thus, the following continuum is presented:

<table>
<thead>
<tr>
<th>A Continuum of Settings and Three Ways of Thinking About Them</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Everyday life</strong></td>
</tr>
<tr>
<td>Increase in cognitive difficulty,</td>
</tr>
</tbody>
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On one-to-one tests, Adam is clearly labeled as a special needs student. In other settings, his disability disappeared because “Adam performed well in everyday life; he handled the tasks that came his way. He did not perform well when he was limited by a social script that said he had to handle a task by himself in a specific way with no help from his friends” (p. 30).

Just as social scripts determine what makes a special needs student, habituated social scripts and cultural formations also make determinations about what counts as

\(^3\)LD is now more commonly referred to as a special need.
schooling, teaching, and learning (in terms of both student learning and professional learning). This parallels the story Rachel told about her bilingual granddaughter who teachers thought needed speech therapy. They were looking at fixed definitions about what it meant to be literate in a school setting, not thinking that a young child who speaks two languages might require additional time for language processing. To see a student in this way requires a more fluid and multi-variable concept of what it means to be fluent in a language.

Interviewees’ perceptions of ELEs helped illuminate some of these contested concepts. Returning to Broughton’s (2010) idea of “culture as a volatile field of creative formation and transformation rather than a heritage of entrenched traditions” (p. 331), one can start to see the ways school and classroom culture can be volatile and subject to shifting contexts and perceptions.

In traditional schooling and the metaphors used to describe them, understandings of these concepts are more fixed and embodied by national standards and standardized tests like the SAT and AP exams. For those interviewed about their ELE, these fixed ideas about school, teaching, and learning were challenged and, in some cases, unmoored. How are these concepts and scripts identified by others in the social distance? For analytic purposes, the fixed and fluid continuum acts as a parallel to Varenne and McDermott’s (1998) ideas about the cultural variable of increasing constraints that determines how something is understood.

**ELEs: Camaraderie not Consensus**

While revisiting the three narratives, it is helpful to look at each ELE individually and then as a whole for points of camaraderie. IES and NASA will be explored first, while the A2MCA will be highlighted later, as those interviews suggest some
implications for the practice as it relates to secondary student teaching and adult professional learning.

**IES: Who Can Learn?**

The IES narrative surfaced tensions related to fixed ideas of who could learn in a challenging class. George thought,

IES was striking … because it students self-selected from across the academic intensiveness spectrum. There were people in the class that didn’t take all those advanced classes. Didn’t consider themselves to be super smart. But then there were also people that were in, say, Calc 3 as a sophomore.

Jane elaborated on this idea: “You had people who were super into tech stuff, then you had people that were on student council, and ‘popular’ groups, and then you had people that were more reserved.” Malik also suggested that IES attracted different social groups.

Participation in the course was open to any of the 100+ students from my mixed and mainstreamed sophomore English classes. The students that were initially interested in the course (before it became an afterschool class) were more intellectually diverse in terms of the traditional ways students are tracked from test scores/grades. That said, the final group that participated in IES and the ELE maintained an unusual mix of abilities, as measured by traditional metrics.

The problem with the traditional metrics that define how smart a student is is that school systems generally only allow for a finite amount of success. As explained by Varenne and McDermott (1998), schools will make “nearly every [student] found wanting, having to accept the place an evaluator assigned as ‘their’ place” (p. xii).

Summarizing their research, they state:

Students in various educational settings—at an after-school club, at home doing homework, at a home for runaways, and in a school for dropouts—are in much better shape than they would appear through the
usual institutional lens. But our recognition of their success is not consequential if schools have only so much success to give. (p. xii)

IES instructors weren’t worried about how the larger institution perceived the students. The course was open to—paraphrasing Jane—students that wanted to be a part of IES, that wanted to be challenged.

When the course had to run outside of the school day, some barriers to participating in the class were created. Students without additional time or perhaps transportation might not have been able to attend, but there were no barriers to participation as far as the institutional assessments of students because of grades or courses that would have to be completed to participate. There was a single situation where a student I had never taught, in a different grade, heard about the class. He asked if he could join and was immediately enrolled.

Although students were given course credit as a regular course, it may have been similar to an afterschool club where affinities to content areas, or, perhaps in this case, the classroom environment we created, allowed for self-selection of certain types of students.

The class was linked to the Los Angeles ELE. For that reason, interviewees in this event did reflect on assessment. This was not institutionally required by the school districts for the adult learners in the other ELEs; as such, it did not come up in interviews. Like many upper-level college classes, IES did not fixate on sorting and assessment. George best captured the interviewees’ collective recollections related to grading:

Everybody ended up getting some kind of decent grade, an A of some sort. Everybody ended up putting enough work in that those grades were justified. That helped because it took the focus off maximizing your grade and more on learning and interacting with the material. If it was a super grade-intensive class, people are going to do just what they have to do to get the grade and less what they need to do to make the learning experience successful for that.

While the ELE itself was not graded, there was an institutional expectation that students would be held accountable through grades. This social script was required by our
secondary school and college admissions counselors. These pressures to sort students in a more established way may have been mitigated to some degree because, as George noticed:

We were all novices at the things that we were doing. A lot of the assignments and a lot of the material were all stuff that nobody had ever done. The class was not designed for you to just be on your own and just do everything on your own. You had to cooperate.

Cooperating in this way was reported as a novel social script in the interviews and existing journals of IES students. Most traditional classes emphasize individual skill on more fixed and prescribed tasks. At that time, a normal English class would be more focused on a limited range of tasks like analyzing a novel, working through vocabulary lists, or five-paragraph essays. IES required writing and editing business letters, proposals, planning symposiums, cold calling, collaborative writing in multiple genres, and heavy peer-editing, which were not usual ways intelligence or academic success was assessed in school. While there was some differentiation in student grades (mostly A-, A, and A+), students were broadly assessed by their engagement with the class and the projects we were undertaking. Process trumped product in this class and its related ELE. Although there was no formal assessment of the adult learners in the NASA and A2MCA, the importance of process over product did surface in those narratives.

**NASA: Learn Form to Leave Form**

American chess prodigy Josh Waitzkin (2007) wrote, in his autobiographical book about learning, that one must “study form to leave form” (p. xviii). This was the best explanation for how my previous experiences of trial and error developing ELEs

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4There was the Los Angeles IES and, the following year, a New York City-focused IES. In addition to those two experiences, I had planned at least 30 significant ele- or ELE-type projects prior to designing the NASA-CCIC event.
informed the development of the NASA ELE. Earlier ELEs that I was a part of, like IES, were so fluid that I often felt like I was trying to hold handfuls of water that was slowly leaking on to the floor. Like anything in life, practice helps one get some understanding of ways a learning experience can be fluid within a wide range of constraints. In some ways, the NASA ELE was the most challenging event to design because we were in a fixed location for a limited amount of time.

Borrowing Rachel’s metaphor, we developed an interdisciplinary and media-rich base curriculum as a medium that people could dig into based on their needs and interests. They planted seeds, and we had the medium to help their ideas for new lessons and units to grow. The content of this ELE, though deeply interdisciplinary, was more visible than the other two ELEs—it even had its own website (see Figure 9.3). The Hot curriculum was an integral part of the day that Eleanor (and the other participants) noticed. She said it was presented as something the ELE organizers thought about in a tone of: “This is the science, and this is how we thought it should be presented, but how would you do it?” Even with a clear curriculum to build on, there was a perception of fluidity; learners were welcome to do what they thought needed to be done with the content we presented.

In addition to interviewees taking notice of the curriculum and its utility for developing ideas, NASA interviewees also sensed a structure and progression. John remembered the event opening with a short documentary film that was like a sweeping net collecting everyone to make sure we’re all kind of starting from the same common building point…. I don’t know if sequential is the right word, but it seemed comprehensively structured, where the details rested upon the previous experience. I think as the scientists came in
Figure 9.3. Sample of NASA-CCIC Hot Curriculum

and as there was more dialogue and chances to kind of peer converse, you
could see that, “Okay. This kind of fits.” It was broad, but it was also
directional.

Participants in the other two ELEs didn’t talk as much about the design of the
ELEs.\(^5\) NASA ELEs interviewees had a felt sense of the open progression outlined in the
program. Teachers and scientists would explore, evolve, enhance, elaborate, and evaluate
project ideas. John’s assessment that it was broad (fluid) but directional gives a sense of
how the organization felt over the course of a school day. During the exploration phases,

\(^5\) Frankly, getting from one place to another was a bigger concern during the IES and
math ELEs.
there were activities that allowed for pairings between teachers and scientists and then random pairings within the group.

During the teacher and scientist rotations, Eleanor noted that our prompts made it “very personal.” Rachel felt like “you had a relationship with the scientists within just ten minutes of talking. It was awesome.” Eleanor recalled that these social groupings immediately allowed her “to know, or at least made me think about who to go to for the information I want.” There were fluid structures in place to help people open up and make connections. Learning experience organizers for the film clip and the prompts used to look at images from the Climate Change: Picturing the Science (Schmidt & Wolfe, 2009) book were very open lines of inquiry allowing for choice and personal connection. There were similar learning activities during the other ELEs, but they were not mentioned during participant interviews.

Despite a fixed location and limited time window, the NASA ELE structure was designed to be open and responsive to the interests of the individuals and groups. In Rachel’s words:

It wasn’t a lecture hall, either. It was just a series of rooms and offices where we broke out, sat around in these rooms and offices, around tables and chairs…. I wasn’t looking for right or wrong answers, I was really trying to get underneath the skin of stuff. For me, personally, it just makes me feel like I’m learning something in a better way … the scientists helped you ask: “How can we look at [the science] from a personal perspective?”

The office spaces could have been classrooms, but we used the day and the space in ways that allowed for more “real” or fluid explorations of science.

John also noted the importance of personal interests within the topics presented in the Hot curriculum:

We talked, and people began to show different preferences or different ideas. So, maybe there were eight, ten of us, and we kind of splintered up into groups of three, or four, or two, depending upon what direction our interests were going.
And there were other sections of the ELE that allowed ideas and interests to evolve, be enhanced, and elaborated on with and without scientists. John explained:

Scientists would come in and talk a little bit, then we’d kind of debrief and plan a next strategy of questioning or where we wanted to go. Then [at one point] we were in the whole group and we shared out. We were able to [continually] contract and expand our ideas.

This continual contraction and expansion is a representation of the ways the ELE remained fluid despite constraints. Those same constraints may have been what made the fluid structures more noticeable to interviewees.

**Professional Learning**

NASA and A2MCA ELEs interviewees made direct comparisons between the habitual scripts and fixed concepts of teaching and learning with their more fluid perceptions of what happened during the ELEs. Reflecting on the NASA ELE, Eleanor stated that most professional development is approached with a command and control attitude of: “This is what you need to do. This is the curriculum. Now you need to go do it.” Rachel elaborated on this idea by contrasting their time working with climatologists and other teachers “having a one-on-one conversation[s]. That was a huge difference. A lot of times, I don’t get that when I go to conferences. You’re sitting in a room with 30, 40 other people and someone’s up on a podium or stage, and they’re talking at you.”

Kevin, shared the same fixed perceptions of school-based professional development (PD) that Eleanor and Rachel discussed:

If you taught students like the way PD is often done, you would get the worst evaluation ever. That’s the way PD is presented to teachers. I get that [administrators and school leaders] are trying to get a whole lot of people the same information all at once. There should be more opportunities to be able to be able to venture out of the norm or to do things like the [A2MCA ELE].
This idea of venturing out of the norm speaks to breaking with habituated behaviors or ways of doing adult learning. Katherine thought the more fluid nature of the ELEs made you see things in a different way than we do when we have to get kids through all of these [district mandated learning] targets. I love going to professional development for cooperative learning and I draw from that, because I get things I can use in my classroom the next day. Whereas [this trip] made me start thinking, “Okay, I’ve gotta change a little bit of my thinking here.”

Katherine’s reflection is notable for multiple reasons. First, she highlights a tension between fixed learning targets and the more fluid outcomes of ELEs. This aligns with Eleanor’s, Rachel’s, and Kevin’s ideas about PD.

Second, Katherine notes a more typical professional development experience (cooperative learning) that she enjoys because “I get things I can use in my classroom the next day.” This speaks to an immediate (and often important) utility for most professional development: a fixed input and fixed output. By contrast, the ELE moved her to a metacognitive place where she started thinking, “I’ve gotta change a little bit of my thinking here.” There was no prescription or predetermination as to what were her personal development and the development of her classroom practice.

Teacher interviewees all perceived significant differences between the fixed concept of professional development in school, versus the more fluid professional development experienced during the ELE. This offers another possible explanation why interviewees’ metaphors and perceptions about the fluidity of ELEs contrasted with the fixed metaphors and perceptions of traditional schooling and professional development in that setting.

**ELE Convergences**

IES interviews surfaced shifting ideas about “who can learn” and the concept of assessment in traditional school settings. NASA interviews suggested that an ELE can
still be a fluid experience, even with a curriculum in place and constraints that were absent in the other two ELEs. The ELEs that were professional learning experiences for adults (NASA and A2MCA) were contrasted with traditional, more fixed ways of doing professional learning. Convergences across examination of all three ELE narratives continued orbiting around fixed and fluid concepts of teaching, learning, and curriculum.

**Teaching and Learning in Motion**

Just as the adult learners spoke about fixed “sit and get” learning experiences, Jane noted that the interactions with professionals during the IES ELE were never situations “where you were going to just listen to someone. We had to be prepared to ask questions.” While this is not, in and of itself, the apex of fluidity, it does speak to a more dialogic curriculum in contrast to a more common monologue.

Eleanor also noted the interactive nature of ELEs:

There wasn’t anything at the NASA experience that I remembered explicitly saying, “You have to believe this. You have to do that.” But I think [my understanding shift was] just based on our conversations.

When Eleanor looked at the program for the ELE, and the open (or perhaps, as John noted, “directional”) structures put in place, she “was excited, [and was] like, ‘Oh my God! I’m gonna go. I’m actually gonna have fun while I do something new.’” She linked this directly to her students’ experiences in school:

That is the part [more flexible structures] I feel like all of our kids crave. They wanna have fun while they’re learning. If we can get them to keep asking questions and just give them enough structure to say, “You may not know how to ask questions yet from research. But I’m gonna teach you that part. So that the next time you pick a topic you want to learn about, you’re able to do that on your own.”

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6This idea of students, teachers, and curriculum in motion was suggested verbally by Dr. Vinz (1997) but also a framework in her *English Education* article titled “Capturing a Moving Form: ‘Becoming’ as Teachers.”
This dynamic interplay among teacher, learner, subject and space is something Jane felt IES allowed for students by giving them “feedback in a positive way by not being made fun of or shut down on our opinions. It really allowed us to challenge ourselves.” Her statement assumes that, in her experience, students were often “shut down” if ideas were not within a socially acceptable range of answers.

Malik looked at teacher-student interactions in an even more fluid way. He talked about some of the more animated moments people had during IES and the ELE when confronted by the energy of the student who is having a moment, it is a ship that’s going around a planet at top speed. Instead of trying to stop it, you’re just trying to have the ship swing around using the gravity of the planet and fling it the other direction, so it keeps moving. Maybe that’s what teaching is about. I think it’s about energy, about redirecting energy.

This idea of managing high energy is linked to what existential psychologist Diana Fosha (2008) presents as transformance—the opposite of resistance. To her it is “the overarching motivational force, operating both in development and therapy, that strives toward maximal vitality, authenticity, and genuine contact. A felt sense of vitality and energy characterizes transformance-based emergent phenomena” (p. 291). Combining Fosha’s and Malik’s idea, teaching could then be seen as redirecting energy toward maximum vitality and genuine contact with people, places, and ideas. This idea of teaching as transformance is also helpful in the context of all the metaphors that related ELE to sustenance or an energy source like the “a vitamin booster shot,” a “really good buffet,” or an “exotic fruit” you’ve never tasted before. The ballistic metaphors (a football game or the Iraq War) also speak to the vitality and energy of transformance.

Transformance illuminates how the concept of teaching shifts during the ELEs. Teaching and learning becomes about movement, fluidity, and energy as opposed to inputs and outputs. This lens allows us to think of fixed learning experiences as ones that have minimal movement and vitality and fluid ones as constantly moving, slightly
unpredictable, and dynamic. John, and many of the other teachers interviewed, talked about lack of vitality in the content often valued by their institutions. Like Eleanor, John started thinking about ways to give students more space to explore, stating that he was empowered [by the ELE] to scrap packaged labs, or assessments with mostly fill in the blank type answers. Now, I’m more open to giving the kids a problem, have them do some brainstorming and approach the process differently, without knowing that there is a three-line space for them to fill the answer in on a worksheet.

Recall, John used the Home Depot metaphor to help us think about purchasing the tools we need to learn in a traditional school. The analogue here is the pre-created or “packaged” labs or assessments. The tools for learning suddenly give way to a fluid practice of not-knowing.

Rachel thinks a lot of teachers stick to the established or pre-packaged scripts of teaching because they are afraid that if they change it will blow up in their face. It’ll make them look bad, you know. So, we’ve got to stick to this schedule thing. This is the way I learned how to do it. This is the way you’ll learn how to do it god damn it.

She notes the established, historical nature of teaching practice. The habitual scripts that suggest how it has been done dictate the way it should be done.

Eleanor felt that the ideology of teaching and practice experienced at the ELE is very different than how we think [or are told] teaching should look every day. The ways we normally think about teaching create a lot of the pressure around not wanting to fail in front of colleagues, in front of teammates and in front of students. I feel like culture has a lot of pressure. We tell kids it’s okay to fail. But I don’t think adults believe it in themselves. The people I work with are phenomenal people. They’re admirable. They work hard. They’re committed. But they don’t want to fail. They’re afraid.

This pressure on of not wanting to fail could instead be seen as the way the institution wants to see teaching. Rachel focuses on the individual, but it might be more helpful to think about how the trait of “successful teaching” is defined by schools. Despite modern teacher evaluation articulations that support student-centered classrooms, teachers
continue to feel institutional pressure to be an expert that is always in charge. The concepts of teaching and learning perceived during ELEs by interviewees suggest a more open and fluid idea of teachers and learners as co-constructors of knowledge who create spaces for inquiry and exploration. Content is not fixed, but uncovered by teachers and learners working together. This more variable conceptualization of teaching as an interactive process also affects understandings of curriculum.

Curriculum in Motion

When it comes to what is taught, every ELE interviewee reflected on fixed curriculum determined by an institution in relation to curriculum that values different ways of knowing and doing. Eleanor pronounced that teachers easily fall into this mindset of trying to do what we’re supposed to do. With the mix of the [new state mandated teacher evaluation system], we lock ourselves to the way that [the textbook or district office] laid out curriculum on a piece of paper.

Rachel also hypothesized on the limitations of fixed curriculum laid out in a textbook:

Of course, there’s real science in our classes [and textbooks], but there’s not enough of it to use and use again and again and again. [Textbooks] talk about real science but the pedagogy behind it, how you’re supposed to present it, how you’re supposed to get your students to learn it, how they’re trying to get you to use their materials just doesn’t work.

Again, the fixed nature of a scripted curriculum does not seem fluid enough to “work” for learners.

Contrasting these fixed expectations for teachers, George thought IES took the material from the books and then it drew in material that was from multimedia sources. It combined them to flow together and intertwine between each other around themes. It basically allowed you to start seeing connections.

He described the curriculum as flowing and intertwining. This also mirrors the more organic and open metaphors participants used to describe the ELEs. Katherine’s
perception of the A2MCA ELE could be seen as specific example of the way George was able to see connections. Katherine said, taken as a whole, the ELE made her realize she didn’t have a clear understanding of how math has changed at the collegiate level ... [at that time she was in school] nobody was doing stats. Stats was like an extra little class you took in college, it wasn’t considered that important. And then to see it in all of those fields. [That got me] really keyed in. Then it was like, “Okay, now I’ve got to watch Moneyball, and I’ve got to learn about this, and I got to see where my kids could use stats.”

Like Rachel, Katherine made mention of the historical constructs of what is taught in school. After noticing the historical shift, the ELE allowed her to make connections between the content she encountered and other texts and experiences—including popular culture content like the film Moneyball.

Rachel also felt part of the curriculum was about making content fluid and personal. She thought the climate scientists she worked with during the NASA ELE “connected you to the knowledge. They didn’t just say, ‘Here, this is what I know,’ you know? They wanted you to be connected to it”—to things that she saw in her backyard.

Connections between an individual and content also expanded beyond a single established discipline. This bending of disciplinary boundaries was mentioned in every interview. A comment most representative of this idea was when Eleanor said the NASA ELE reminded her that “there needs to be more open discussion for our kids through the humanities, through math, to say, draw your own conclusions. But here’s the data and what can we do.”

While each ELE was anchored in a discipline (English, science, and math), the boundaries in the most contained ELE (NASA) were expansive and integrated many disciplines, media, and learning modalities. Vinz (1996b) uses metaphors to reveal the complexity of interdisciplinary work that keeps us struggling through the dialogic, the coils and tangles, the rhizomatics and the folds and hinges with our kids in the classrooms. We might think about using disciplines figuratively to explore meaning, value, and purpose. Within physical and mathematical ideas are the philosophical, the psychological,
and the ethical because all concepts of disciplines/interdisciplinary are products of human imaginings and production. In the wastebaskets of many artists, musicians, thinkers, teachers, students, writers, biologists, architects are the refiguring that could help us look more rhizomatically. Messier Learning. Following the Rhizomes. (p. 8)

Many of the interviewees talked about the mess, the connections where there were none, and the ability to see more parts of a new whole, or multiple pathways they were able to consider during and after the ELE. There was always a compass to the work but nothing as clear on the horizon as a singular assessment, test, or outcome. The emphasis of ELE instruction was not between learner and teacher, but a multiplicity of people, places, artifacts, disciplines, and ideas in the mix.

In complexity theory, only when a system is sufficiently complex can new forms emerge. Mark Mason (2009) used complexity theory as a tool for thinking about education. He suggests that “the manifold interactions among constitutive elements or agents that are responsible for the phenomena, patterns, properties, and behaviors that characterize a particular field” (p. 119). When complexity is embraced, Johannson (2005) points out, “the intersection of fields not only provides the perfect environment for widely different ideas to come together, it also makes it possible for lots of different ideas to do so” (p. 101). These and other findings (Page, 2008, 2017) suggest that embracing complexity allows for a greater variety of unique outcomes, including more enjoyment, creativity, and productivity.

There are always complex people and often complex content in traditional classrooms, but their interactions and possibilities are often limited by single teaching methods focused on limited outcomes and goals. Casella (1999) explains that CS thinks about pedagogy “as ‘movement’—as transgression and transformation” (p. 119). At least two of the ELEs were perceived as transgressive by teachers and administrators for a variety of reasons.

I asked all the interviewees what they thought the purpose of each event was. George thought the purpose of IES was “to be a model for other teachers to show them
what could be done in an English class.” While I did enjoy pushing those boundaries, it was never something explicitly articulated or expected as an outcome. George recalled some blowback\(^7\) in the English department because you were the newfangled, young, teacher that was making everybody else look bad. Because, the kids enjoyed it. I think there were people in the English department [at the high school] who were not okay with the multi-media way that you taught the material. But we did a lot of cool stuff that got good publicity. This whole class [not just the ELE] taught us as students to challenge authority.

Here the transgressions were the fact that IES pushed back on the system and created a space for a challenging class that “kids enjoyed.” This idea of enjoyment in school is not often discussed in educational discourse. From my perspective, the purpose of IES was to get students to grow and be more creative in their lives by engaging in a discipline at its furthermost boundaries in conjunction with other fields. In reality, IES did develop into a course that was not just about challenging authority but organizing teachers, students, and parents into a powerful force to advocate for a different type of curriculum in the school.

There wasn’t just pushback from the IES experience, but there was also intense questioning from my direct boss in relation to the A2MCA event. To elaborate on the office politics in play is beyond the scope of my research questions, but the basic situation was that there was an opening for me to utilize some of the district’s professional development monies.

My direct boss did endorse the spending and the event but (paraphrased here) “would have rather spent the money on a consultant coming in to talk about the math common core standards.” The details of these interactions are fuzzy, but I recall there being so much pushback immediately after the event that I was concerned about losing my job. This felt sense was present on my drive home from the ELE despite the rave reviews of teachers and the department heads that participated in the ELE.

\(^7\)Note the military metaphor.
My hunch is that the NASA ELE escaped scrutiny because it was being hosted by NASA, and that made it feel more legitimate than some “Curiosity Adventure”\textsuperscript{8} of my whimsical design.

In ways big and small, IES and the A2MCA and even the NASA event\textsuperscript{9} could be seen as smashing up the dominant values of the existing educational system. Malik had mentioned Joseph Campbell’s heroic journey. I did not think there was anything heroic about being an ELE designer, but there was another mythological role I may have been inhabiting. If the positive idea of the teacher is one who directs energy, hoping for whatever transformances emerge, the more negative—or at least subversive—side of my role in designing ELEs might be that of a trickster. The trickster knows this is dangerous, but also a bit fun, hence the idea of poking the bear at your own risk. According to Campbell (1989),

\begin{quote}
There’s a very special property in the trickster: he always breaks in, just as the unconscious does, to trip up the rational situation. He’s both a fool and someone who’s beyond the system. And the trickster represents all those possibilities of life that your mind hasn’t decided it wants to deal with. The mind structures a lifestyle, and the fool or trickster represents another whole range of possibilities. He doesn’t respect the values that you’ve set up for yourself, and smashes them. (p. 39)
\end{quote}

This made me think that my co-teachers and I working in these ELEs were, to some extent, tricksters because we were upending social scripts, expectations, and definitions. This catalytic role of the ELEs may be helpful. Trying to support complicated and fluid ways of doing school with new ways to think about teaching, learning, and curriculum in

\textsuperscript{8}I imagine my supervisors are still wondering what exactly that term means.

\textsuperscript{9}Many of the NASA ELE participants joked that their textbooks gave a few paragraphs to climate change at best. Although the Next Generation Science Standards call for this type of crosscutting science work, science classes as a whole are a long way from being able to teach in the type of multimodal, interdisciplinary, and inquiry-based way modeled during this ELE. It happens, but is not common to see this when visiting schools—yet.
a system focused on the fixed and linear requires teacher tricksters to put individuals and, in the best cases, systems on a path to shift perspectives (for better and worse).

In addition to teaching practices that can be viewed as transgressive, Casella (1999) states that teaching informed by CS is generally interested in the possibilities of education to “become fully and meaningfully incorporated into the lives of people as they make decisions about their futures and interact with one and other” (p. 119). This articulation of CS aligns nicely with the higher EXP levels on Gendlin’s (1969) scale, where experience is integrated and focused on the creation of personal meaning.

**Feeling California (New York and Michigan)**

Chris Cornell (1994), the lead singer of Soundgarden, famously sang he was “feeling California and looking Minnesota.” Certainly, this would be useful fodder for inquiry for a therapist or an educator. “What do you mean by feeling California?” “What do you see in Minnesota?” In the same way, participants’ metaphors created openings to probe the ELEs without passing judgment on the quality of either experience. “Why do you think your metaphor for school is different than the metaphor for ELE?” was a fertile discussion starter.

Participants’ metaphors also quickly suggested the felt sense of the ELE or, more specifically, the memory of the ELE. The way people responded to the questionnaires allowed me to consider the participants’ metaphors using the seven-point EXP scale.

This EXP scale measured participants’ experience to the degree that it is dynamic, fluid, and personally useful to each learner (see Gendlin’s Short EXP, Chapter III, p. 40). Common metaphors and experiences of traditional schooling often align with the lower levels of the EXP scale where things are being done to the learner and they are either detached from an experience like the cows being herded (stage 1) or emotionally
involved but reacting to an experience (stage 3) like the fear one might experience in a prison yard.

The 37 metaphors ELE participants’ shared on their questionnaires were given rough measures using the EXP scale\(^\text{10}\) (see Tables A.2 and A.3 in Appendix A). Roughly 10% of the metaphors suggested EXP stage 4, 41% suggested EXP stage 5, 22% suggested EXP stage 6, and 27% suggested EXP stage 7. Reliability.

With more data, participants’ interviews could be measured more precisely via the EXP scale (Klein et al., 1969). Interviewees were all embracing personal issues and challenges with different degrees of treatment. Some comments about ELEs align with the treatment of experience at stage 7, where there is a “full, easy presentation of experiencing; all elements confidently integrated” and treated in an “expansive, illuminating, confident, buoyant tone.” Starting with Jane from IES:

I remember feeling like I was a part of it all / I think that was the first time that I remember thinking, “I can do more.”… For me personally it was a changing point. I realized the traumatizing four years of high school isn’t everything—life doesn’t end here.

Jane elaborated on this idea, stating that the ELE helped make her more confident about doing new things and even inspired her to go away for college. Her ELE experience (over time) was integrated into personal issues and challenges.

Malik also suggested a fully integrated experience take when he proposed that his ELE was like the difference between understanding the composition of honey and tasting honey. IES was like tasting honey, and then you can study the composition of it…. What I would focus on in terms of the IES pedagogy. I think it’s this idea of making connections where none exist or where none seem apparent. And always making the epiphany open-ended. There’s always more possible, like the story’s never fully written. It sticks with me.

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\(^{10}\)Metaphor alone was not enough data to make precise measurements, but it did give a sense how people perceived their ELE experience and allowed me to select people with probable range of EXP levels for the interviews.
Malik used metaphor to talk about a literal integration, a digestion, of the IES ELE experience. He is also confident that there is “always more possible.”

From the NASA ELE, Eleanor was integrating the content we were studying with the experience of meeting with people that lived through Superstorm Sandy and scientists based in New York City:

These are people’s lives. [Climate Change science] isn’t just a number on a paper to tell you how many storms we’ve had, or what the percentage of global warming or ice melted. These are effects that are really impacting people. / I felt like I walked away with a much deeper understanding of global warming by asking questions.

In her previous comments, she was confident that she could open up curriculum for students by telling them, “You may not know how to ask questions yet from research. But I’m gonna teach you that part. That way the next time you pick a topic you want to learn about, you’re able to do that on your own.”

NASA ELE participant John also integrated personal experience into his work in the classroom, stating the ELE allowed him to reconnect the dots from 20 years before, when I was doing it myself a little bit, and not the degree [of NASA scientists], but having been there in the past allowed me to kind of recapture that enthusiasm for open-endedness and not knowing where the tunnel is going to lead [in my classroom].

Katherine, Kevin, and Craig also talked about their experience in expansive, confident, and buoyant ways:

Kevin: I was also fascinated by the biostatistician [Dr. Bhramar Mukherjee] and her work with epidemiology. Her work made me think about using a zombie virus type lesson to lead in to something like exponential growth. That’s something an algebra kid does, they do exponential growth! I talked about that when The Walking Dead came back on the air last week. They were like all engaged “because [I was able to tie it into a frame of reference that they have that they know, now you can say, “What about if this happened for real?” or “What if you knew where patient zero was?”… Just being able to be fully engaged in something. To dive into something that really
interests you. I feel like teachers want to be able to provide opportunities like that for their students.

Katherine: As soon as we got there, I felt a change. Just being at the campus. But then all of the people that we listened to—I found deep joy in being back in academia.

Craig: I saw in the news that Domino’s Pizza [based in Ann Arbor] has put driverless cars into action in the last month. I’m a part of that, even if I had nothing to do [with researching driverless cars], I got to ride around in a car in their fake [driverless car testing] town. It’s more than just me grabbing a headline to use in class—I was there…. What are the mathematics, the analytics that’s required to get this car to operate without a driver? There’s all little pieces [of math] there. When you scale them down, and down, and way down, maybe they get to what I’m teaching my kids, but it’s there. What we got to see was all those pieces embedded together at M-City. / To interact with variety of people in different fields talking about the value of mathematics, that buoys you to realize that we need to communicate this idea to kids.

This belief, that teachers could change because of ELE participation, will be elaborated in the concluding chapter; examples from these math teachers are helpful to considering implications for practice.

Other participants were more clearly at stage 6 of the EXP scale. At that stage, there is “synthesis of readily accessible feelings and experiences to resolve personally significant issues” and “feelings are vividly expressed, integrative, conclusive or affirmative.” A majority of George’s interview about IES and Rachel’s about NASA aligned with that descriptor:

George: More than any other class that I had experienced to that point, [IES] served as some kind of example that learning is fun. It’s not all dry books and stuff…. It basically allowed you to see that connection.

Rachel: I wasn’t looking for right or wrong answers, I was really trying to get underneath the skin of stuff. For me, personally, it just makes me feel like I’m learning something in a better way.

Rachel and George were affirmative about their experiences but not overall as expansive in their responses as other participants. All nine interviewees presented their experiences
at very high stages of EXP, weaving personal concerns, classroom issues, and life into their descriptions of the ELE.

After living with, exploring, and sculpting the narratives, Mihaly Csikszentmihalyi’s (2008) ideas about flow were not as useful as the EXP scale. Participants did use descriptors that might have related to being in a state of flow, as when Malik talked about Los Angeles as “being on an anesthetic” and Jane’s feeling that she was “a part of it all.” Many of the interviewees and their metaphors suggested heightened states of energy and awareness when recalling the ELEs. That said, the interview questions and data collection methods were not designed in a way that would allow me to make clear assessments about whether participants entered a flow state in ex post facto sites of study.

**Teaching Moves**

Taken as a whole, these interviewees shed light on some broad teaching moves that seemed to make a difference in terms of the quality of their experience (as measured by the EXP stages). Each of the themes below can be seen in contrast to the more fixed traditional classes that depend on worksheets (although there were tools available to structure ELE learning and reflection\(^{11}\)), a single authoritative textbook, and a clear series of assessments. The following five teaching moves are strong candidates for ways of designing learning experiences that may have contributed to participants’ fluid perceptions of ELEs.

\(^{11}\)In *Making Curriculum Pop: Developing Literacies in All Content Areas* (Goble & Goble, 2015), we talk about the use of Learning Experience Organizers (LEOs). LEOs are not worksheets because they “allow students to articulate unique insights and to work with other students to uncover (and as such, socially construct) … meaning[s] and ideas presented in a text” (p. 13).
Embracing Popular Cultures and Culturally Resonant People, Places, and Things

Interviewees responded to people, places, and texts (sounds and images) that resonated with them. Each trip was designed for many points of exploration, and there were different junctures of and for resonance for each interviewee. Each narrative highlighted the importance of being there. Making personal connections was not personal in the sense that IES students went on to Hollywood careers, or that the teachers were going to turn students—or themselves for that matter—into climate scientists or driverless car designers. Despite this lack of linear application, interviewees reported that they were “part of it all” (Jane), or doing “more than just … grabbing a headline to use in class—I was there” (Craig). There were even cases of nervous resonance, as stated by Eleanor when she was “worried about [meeting with these scientists] ... I don’t know, for me NASA is the top of the top. I grew up idolizing the work of NASA scientists. I didn’t want to come across as a person who was wasting their time.” People, places, and things used in the ELEs seemed to help participants engage with the experience and personalize it.

Approaching Curriculum as a Rorschach

The NASA ELE was the strongest example of curriculum as a Rorschach. As with a Rorschach test, there was an inkblot of content, but it was presented as something malleable and to be shaped by each student or teacher. Returning to Rachel, curriculum during the NASA ELE was presented in a tone of “This is what we have thought about. This is the science, and this is how we thought it should be presented, but how would you do it?” As a teacher and co-teacher during these events, curriculum is often presented as “open to discussion.”

During ELEs, there was an expectation that most experience was interactive. A participant would never, in Jane’s words, go “listen to someone. We had to be prepared to ask questions.” Most of the people that collaborated with us during the ELE made space for questions; in the case of NASA and A2MCA, collaborators continued their work with
teachers beyond the ELEs, including virtual visits to classrooms. Curriculum and a range of texts, videos, and images are often required, and generally essential. ELEs presented these things as clay for participants to mold, not heavy stones that one must strain to carry.

**Being Directional but not Direct**

John’s statement that the NASA ELE “was broad, but it was also directional” is a nice way to think about the structures of ELEs. Considerable planning went into the design of each ELE. People, places, activities, and the organization of each event were designed to allow a wide range of ideas to be used for teaching and learning.

As an exemplar, IES did not have a narrow focus like learning how to adapt novels into screenplays; instead it was about “the journey from fiction to film.” This moves from a direct objective (to learn adaptation) into something directional that moved the curriculum toward a wide range of themes related to any given book or film. During the California ELE, we learned about the business of making film, about many disciplines required to go from page to screen (Foley artists and animators were part of the ELE) as well as thematic considerations that producers and the public have to consider during this process. These are just a few ways the course was directional but not direct. The same concept held true for the NASA and A2 Math ELEs.

**Consideration of Eco-Being**

Many people recall the non-classroom events at schools. Things like the “Ice Cream Social” were happenings one would not easily forget. This type of afterschool event at elementary schools is similar to the sporting events, dances, and performances in high schools. Often people have stronger memories of these afterschool/extra activities than the doldrums of daily classroom instruction. Jane even spoke to this assumption when she said of IES:
I get excited when I talk about this [class]. That’s something that doesn’t happen a lot. I’m not talking about prom or the championship game or something like that, I’m getting excited talking about an English class that I was a part of. That’s so cool.

People may remember outside-of-school events more because there is clearer purpose (eat and play, win the game, get the guy/girl, wow the audience) in each of the aforementioned extracurricular activities. Maybe they each involve skill, choice, and space for the unexpected. It might also be because you can’t avoid the complexity of social interactions that Malik talked about when he compared IES to a dysfunctional family.

The research of Neuroscientist Matthew Lieberman’s (2011) lab at UCLA confirms that our brain’s default network—the network that kicks in when we stop focusing on something—reverts to pondering the social and social interactions. Researchers have also learned that the same brain structures that regulate physical pain are at work when we experience emotional pain—so much that Tylenol can mitigate a broken heart as it would a headache. Lieberman’s research challenges Abraham Maslow:

Food, water, and shelter are not the most basic needs for an infant. Instead, being socially connected and care for is paramount. Without social support, infants will never survive to become adults who can provide for themselves…. Being socially connected is a need with a capital N…. Love and belonging might seem like a convenience we can live without, but our biology is built to thirst for connection because it is linked to our most basic survival needs. (p. 43)

Every interviewee’s story, at some point, created meaning by reflecting on the other persons they interacted with during the ELE. These people became a mirror to see

12 The ideas in Chapter III about reflection are not a zero-sum game. This research proves Broughton is correct when he says that “reflective awareness … it is a general feature of cognition, not an occasional luxury (p. 4) but we all “get by with a little help from our friends” and often trained professionals. It is also possible that reflection can be lacking new insight or enable new ways of being, thinking and doing. As explained by Brookfield (2016) “reflection is not, by definition critical…Reflection is useful and necessary in the terms it sets itself; that is, to make a set of practices work more smoothly and achieve the consequences intended for them. But this is not critical reflection” (p. 13).
their ideas in a new light. But the physical journey also linked to important spaces, places, and ways of doing things.

In Chapter V, I defined ELEs “as communicative acts (pedagogies) that connect learners to cultural formations using challenge, choice, inquiry, provocation, intersubjectivity (multiple points-of-view), and reflection with the goal of expanding understandings and abilities.” While this inquiry did highlight the importance of intersubjectivity, other researchers (Hall, Critcher, Jefferson, Clarke, & Roberts, 2013; Henriques et al., 1998; Varenne & McDermott, 1998) focus on the limitations of thinking in terms of the binary of the individuals and the groups. As Broughton (2010) reminds us “culture is a volatile field of creative formation” (p. 331), and for that reason we can still look at the individual and group but must also attempt to account for space, images, sounds, texts, i.e., the constantly shifting ways of doing that can influence what can happen in any given place in time.

During this inquiry I came across Thich Nhat Hanh’s (2005) idea of “interbeing”—he states that

The many in the one, and the one containing the many. In one sheet of paper, we see everything else, the cloud, the forest, the logger. I am there for you are. You are, therefore I am. This is the meaning of the word “interbeing.” (p. 87)

Interviewees did not, however, seem to assume the type of interbeing described by Lennon and McCartney (1967) where “I am me and you are we and we are all together.” They did seem to make a variety of connections, wonderings, and wanderings in relation to place, space, and new social formations—different ways of being and doing. “Eco-being” is a term put forth to capture the idea of ELEs that moves beyond intersubjective. “Eco-being” is a term that allows one to think about the whole environment that surrounds a teacher, learner, or group of learners. Designing a learning experience for eco-being means being open to and aware of cultural formations, challenge, choice,
inquiry, provocation, intersubjectivity, space, place, and other beings that may be fodder for teaching and learning.

**Utilizing Fluid Framing**

This was not explicitly noticed by the interviewees, but I hypothesize that the fluid perceptions of the ELEs at the higher EXP stages were at least related to the frames used around teaching, learning, and curriculum. The research on metaphors and framing highlighted in Chapter I and my work as an ELE designer/co-designer make it reasonable to think that fluid framing might make a difference.

Recall Rachel’s encounter with the *Hot* curriculum where she felt like the ELE designers were saying, “This is the science we thought through, but how would you do it?” This is an example of fluid framing. I try to be mindful about framing curriculum (teaching and learning) in these types of ways, not just during ELEs but any learning experience I design or curate. Instead of the more fixed construct of classes and assessment that test “what you don’t know,” learning experiences are framed in terms of exploring what one (teacher and student) doesn’t know (yet) and what the learner and teacher do know and can know.

This ties back to John’s encounter with the scientist where he was honest about what he didn’t know but he knew where to go to get the information. Here, an expert (a top NASA climate scientist) was perceived as someone good at inquiry, not someone who knew everything. That embrace of not-knowing but having a sense of how one might know is not the usual way we think about people positioned in a teaching role. Teachers and classes are often locked into the concept of the teacher as an expert. Instead, the teacher’s role and expertise can be more fluid. The teacher can be someone who knows a whole lot about very little. This is a personal teaching mantra that seems to create a lot of space for everyone involved in a learning experience to be surprised and flourish.
Mountains, Metaphor, and Meanings

I’ve always said don’t drop out. Just stay in and subterfuge, whatever. Subvert it. I mean that’s what we did as Beatles was subvert. We got an MBE, which one of the biggest jokes in the history of this island, probably. That’s subversion and that’s revolution. (John Lennon, cited in Hindle & Wiles, 1969, p. 1)

Beyond the Mountain

In some ways, Tom James (1980, 1995) presents us with an impossible question when he asks, “Can the mountains speak for themselves?” In the ELEs explored here, and likely the Outward-Bound events James was researching, the system was too complex to lean hard on one side of this continuum or the other. Mason’s (2009) use of complexity theory states:

our best chance of success [in educating people] lies from addressing the problem from as many angles as possible. It is more than that we cannot quantify the salience of any individual factor: we probably cannot even isolate any individual factor’s influence in order to assess its salience. (p. 121)

True, an Outward-Bound trip or an ELE is not as complex as the global financial network or our planet’s climate, but these two examples both present complexity at levels of magnitude far exceeding that of a traditional classroom. Mountains may speak for themselves but/and moderators (and peers) can help learners process experience. The interviewees noticed the moves of the moderators but also engaged with everything on the metaphorical mountain. This is not so much a tension that requires a resolution, but a polarity that ELE designers need to manage.

In some cases, moderation can be very helpful. In the case of the NASA ELE, participants that work in my district were able to craft a lesson easily after this experience. They are all very bright, but they use the Hot curriculum as a guidebook from their moderators. The Hot base curriculum was a launching pad for their lesson ideas in a field they were not familiar with. For IES and the A2MCA, there were programs,
itineraries, and plenty of suggested and required pre-trip reading, viewing, and listening but not the kind of guidebook we had at the NASA ELE. As a result, what people did with the experience was more variant. In some cases, having more moderation through a guidebook would have been helpful; in other cases, less moderation may have allowed for more creativity. Had I been able to come up with a better guidebook for the A2MCA participants, it might have been easier for a participant like Craig to move from being inspired to developing more fluid learning experiences in his classroom (like his Alternative Energy idea).

Moving beyond James’s initial question, we might think of the mountains and ask: Are the mountains complex enough? or What makes for rich mountains? Could a barren mountain still be used to develop a fluid learning experience with a high stage of EXP? Could a dramatic mountain linked to a verdant ecosystem be the site of a low EXP stage learning experience? The answer to both these questions is “yes.” There are many magical learning experiences that happen in under resourced classrooms and stifling ones in classrooms loaded with the best books, technology and teachers. Because these ELEs were all linked to economically rich places and institutions, it would be hard to discount the value of choosing a high-quality mountain for a learning experience; but there were more comments about rich conversations and connections that suggest “richness” and the quality of a resource might benefit from being constructed in a more fluid way.

Implications for Teaching and Policy

If one only considers the events studied in this inquiry at a surface level, these ELEs are not always practical, even if they are possible for financial and physical reasons. Certainly, further study of schooling metaphors and the EXP scale would be required before any broad generalizations could be made about the EXP scale as a marker of better teaching and learning.
Imagine for a second if, instead of/or in addition to a standard course evaluation used in some schools, students were asked a metaphorical question: “Being in this school, or being in this class is like….?” What might this line of inquiry reveal about classes and schools? Certainly there would be generative and positive things said about schools and teachers. This inquiry gives a sense that a preponderance of the data might present closed, constricted, or controlling metaphors common to the culture and specific to those shared by the interview participants in this study.

For those interviewed in this study, a correlation was suggested between the perception and reality of teaching, learning, and curriculum as fixed and fluid in relation to stages on the EXP scale. If fixed learning experiences consistently stifle learners’ progression to the higher EXP stages and fluid ones move learners toward the higher stages, that would be cause to advocate for more fluid learning experiences. This would also be a compelling reason to look for and utilize fixed and fluid frames when talking about school, teaching, learning, and curriculum. These frames could help teachers, administrators, and policymakers design learning experiences and schools that are more enjoyable. Fluid teaching and learning might also elevate students’ experiences and their ability to integrate learning into personal issues and challenges.

In Chapter XI, I did not focus on unique findings from the A2MCA because they were most useful here, when thinking about how these particular ELEs might shift some of the ways we think about and do school. Returning to our idea of the ele (lower case), the story of Katherine’s A2MCA inspired learning event is instructive. Katherine talked about how participating in the ELE reminded her “not to restrict [curriculum], [but] to open it up.”

To do this, Katherine developed a new statistics project using a large public data set from M-City as a model for all of her students. She moved from this toward allowing students to generate their own questions, datasets, and studies, exemplified by the student project where they looked for relationships between box office receipts and a film’s score
on the Bechtel Test. Certainly, this is more work than teaching from a standard issue textbook and working toward a uniform assessment. This example presents a more complex and fluid picture of what teachers do, what students do, and what curriculum might be than how we, in relation to the more habitual ways, conceptualize school. Katherine’s ele did not require travel like an ELE. Still, it embraced fluid content (outside textbooks) and valued emergent learning, the cultures that students wanted to explore, and their ability to work with peers. The resulting experience is more fluid than the fixed type of question one might encounter in a textbook or on the SAT.

Kevin also gives us a model for how teachers can think in more fluid ways about teaching. His math curriculum still relied on many fixed question sets, but he was fascinated by the way people at the ELE were able to “articulate their ideas about math.” To help students to do this, he started asking more open questions. Now he says that he talks to students differently. In the past “I might have just asked them, ‘Well, okay, what type of a function is, this is an exponential function?’ ‘What is that piece? That’s the base. What does that mean?’ Now I might ask, ‘What does this rate of change look like?’” This does not mean Kevin is designing an ele, but it does move from fixed ways of doing teaching, learning, and curriculum toward more fluid ways\textsuperscript{13} where answers are more than a number.

Craig also tried to bring some new ways of doing teaching, learning, and curriculum (the windmill question) to his classrooms. Without being present during those lessons, it is hard to assess what the exact challenges were that prevented him from developing a more fluid learning experience. Still he brought up an excellent tension when he talked about what he considered a healthy learning progression.

\textsuperscript{13}Of note, Kevin reached out to me after our interviews in the hope that I could coach him to do work more like what Katherine is doing. My math skills are limited in relation to what he can do, but I’m always willing to try!
I think sometimes we fight step one, step two, step three, but in the long run some of those principles are there because they actually create a framework for us to learn in a healthy way. You build up the confidence as you remember step one, step two, step three, step four…. There is an element in learning, which is hard to appreciate when you’re 14 and 15, and it’s hard to appreciate if you’re sitting there and you’re disinterested in the topic. You can’t always provide what they want versus what they need.

It is not easy and it’s also not something that can be done every day, because sometimes you just got to plow the field. When hear how some students perceive the drudgery of school, sometimes I’m like “farmers don’t have flowers popping up every day.”

This brings up an important point that, in some cases, there might be a healthier way to learn some things and employ progressions that are helpful. The NASA ele did not start with teachers simply crafting a project inspired by the *Hot* curriculum. There was a broad, flexible, and fluid progression, but there still was a logical progression. Fixed progressions can exist for a reason. It can be easier to learn multiplication after learning addition and subtraction or letter identification before one reads. On the other side of the equation, researchers like David Perkins (2010) at Harvard’s Project Zero remind us that one need not learn grammar before tackling a foreign language or scales before playing a song on the piano.

Craig presents an important challenge for educators, administrators, and curriculum developers, which is to assess when a given curriculum is purely artificial, historical, or not helpful for learning and when it can be useful. A classic example of this is teaching history—most teachers do it chronologically, and yet, some teachers do it thematically. Does it make a difference? This is outside the scope of this inquiry; fixed learning progressions are not inherently negative, but the dominant metaphors for schooling may be a hint that they can often be limiting for some learners or not allow them a way into doing school.

George hints at the value of more fluid curriculum and ways of teaching. He reflected that in IES “you are doing so many different things. [This kind of teaching] is not easy, but it has the best chances at being the most accommodating and effective for
different types of people.” It is more-time consuming for educators to develop fluid learning experiences. If schools want to be more fluid, they can start by looking at the cultural formations like bells, Carnegie units, limited course options, traditional assessment, and narrowly defined disciplines that make it hard for teachers to create more fluid and transformative learning experiences. Despite institutional demands, Katherine and Kevin give us some ideas about ways individual classroom teachers can make the school experience more fluid through some of the teaching moves indigenous to inquiry-based instruction and specific to the ELEs in this study.

**Revisiting the Garden**

Think, for a moment, of my daughter’s classroom as described at the beginning of the inquiry. Desks are in rows, instruction is built around clear targets and sequences, and behavior is carefully monitored with a point system. Computers even track a lot of this progress with a kindergartener. This is an attempt to make learning, and life, more fixed and predictable. The learning experience of most K-12 students generally proceeds this way. As noted by each interviewee, there are often predetermined and inflexible curricular goals designed to meet standards through learning targets, objectives, and outcomes. What if it were otherwise? What would the fluid version of this class and other K-12 classes look like?

Certainly, there are times and places where this may be valuable for some learners in some situations. The positivist tradition would not be such a powerful cultural force if it was incapable of making things happen. The problem is that some of those things that happen are negative, disheartening, and demoralizing to some students. Furthermore, these simpler, fixed, and often binary (input objectives, output learning) ways of designing the educational experience in rigid disciplines do not mirror the kind of
complexity encountered in a family, let alone in the digitally, environmentally, and socially shifting world we live in.

Here it seems wise for form to follow function. To educate for a world where students, teachers, schools, and the planet thrive, there may be value in moving toward educational settings that embrace multiple and shifting cultural formations that mirror the world we live in. Multiple lines of cultivation in school settings should have more value. As John Lennon suggested at the beginning of this chapter, subverting the norms of teaching by moving toward more fluid concepts of teaching, learning, and schooling can be a type of revolution. For those involved in designing and experiencing ELEs, Maxine Greene (1995) offers parting wisdom:

> If I and other teachers truly want to provoke our students to break through the limits of the conventional and the taken for granted, we ourselves have to experience breaks with what has been established in our own lives’; we have to keep arousing ourselves to begin again. (p. 109)
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Table A.1. ELE GROUPED BY ANALOGY/METAPHOR

<table>
<thead>
<tr>
<th>ENERGY SOURCE - SUSTENANCE/DRUG</th>
<th>10</th>
</tr>
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<tbody>
<tr>
<td><strong>4 NASA</strong> This ELE was like an afternoon at the Adler Planetarium on <strong>steroids</strong></td>
<td></td>
</tr>
<tr>
<td><strong>4 A2</strong> This ELE was like a <strong>can of sardines</strong> because it was packed to the rim with fun activities</td>
<td></td>
</tr>
<tr>
<td><strong>5 IES</strong> ELE was like and <strong>exotic fruit</strong> you’ve never tried before because as soon as you taste it you know a completely different flavor.</td>
<td></td>
</tr>
<tr>
<td><strong>5 NASA</strong> This ELE was like walking through a <strong>vegetable garden</strong> when you are hungry because there are many things growing, some you can eat now and some that still need to be nurtured.</td>
<td></td>
</tr>
<tr>
<td><strong>5 A2</strong> This ELE was like a <strong>Vegas buffet</strong> because even if one speaker wasn’t the greatest you knew the next one was going to be fantastic like most of the others.</td>
<td></td>
</tr>
<tr>
<td><strong>5 A2</strong> This ELE was like <strong>a really cold glass of water on a very hot day because it was refreshing</strong> to hear and see what others are doing around mathematics.</td>
<td></td>
</tr>
<tr>
<td><strong>5 A2</strong> like <strong>the SUN</strong> because it spread sunshine on my love of mathematics</td>
<td></td>
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<tr>
<td><strong>5 A2</strong> This ELE was like <strong>going to Disneyland</strong> because it was exciting, exhausting, and we still talk about it fondly today. This ELE was like a <strong>really good buffet</strong> because there was something that appealed to everyone.</td>
<td></td>
</tr>
<tr>
<td><strong>5 A2</strong> This ELE was like <strong>A Field Trip on Steroids</strong> because we experienced so much in such a short period of time. I do wish that we had more time to process after each individual speaker/event. Things got jumbled together and we had to walk right back into our classrooms when we got back</td>
<td></td>
</tr>
<tr>
<td><strong>6 A2</strong> This ELE was like a <strong>vitamin booster shot</strong> to my love of teaching because I felt very invigorated and excited about how teaching my subject to my students could lead my students on so many <strong>varying career paths</strong>.</td>
<td></td>
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<tr>
<td><strong>6 NASA</strong> a <strong>shot of adrenaline</strong> because it broadened my understanding of climate research that continues to trickle down through my courses.</td>
<td></td>
</tr>
<tr>
<td><strong>6 NASA</strong> a <strong>breath of fresh air</strong>, because I was given an opportunity to customize the ELE experience in such a way that I was able to determine the pace and information that I wanted to cover. Unlike the institute days that I experience at my district where every second of every minute is scheduled, I rarely get an opportunity to experience something that is beneficial to my teaching.</td>
<td></td>
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<tr>
<td><strong>7 NASA</strong> This ELE was like perennial seed because it planted new ideas that are still growing!</td>
<td></td>
</tr>
<tr>
<td><strong>5 NASA</strong> This ELE was like gold because it was of great worth, quality, and rarity.</td>
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</tbody>
</table>
NASA This ELE was like seeing a place for the first time because I was trying to take in every part of the experience at once.

IES Rollercoaster because likes and dislikes changed (carnival)

IES This ELE was like an expedition because we were the voyagers on our way to a new adventure, not knowing what was ahead.

A2 An adventure; we went from place to place, soaking in new things, having fun with colleagues and friends, never knowing what we would experience next, and then having to go back to reality.

A2 This ELE was like A Field Trip on Steroids because we experienced so much in such a short period of time. I do wish that we had more time to process after each individual speaker/event. Things got jumbled together and we had to walk right back into our classrooms when we got back.

A2 This ELE was like going to Disneyworld because it was exciting, exhausting, and we still talk about it fondly today. This ELE was like a really good buffet because there was something that appealed to everyone.

A2 This ELE was like an iceberg because there were many scientific, geographic and social layers to the topic of climate change. There is much more to it than just global warming. What we teach in schools, historically, is really just the tip of the iceberg of climate change.

A2 This ELE was like a vitamin booster shot to my love of teaching because I felt very invigorated and excited about how teaching my subject to my students could lead my students on so many varying career paths.

A2 a European vacation... even though I was taking it all in, going from site to site, and was exhausted, I learned a ton while I was there.

A2 This ELE was like going on a business trip because I learned about ways to engage my students and make their learning experiences more meaningful.

IES This ELE was like getting into the driver’s seat of a vintage Ferrari because at 16, all you want to do is hit the open road, and discover the world and be free to be yourself. ELE gave us that.

IES The LA trip was like a time bend. We saw a glimpse of the future, a time after college, when all doors really would be open. Nearly everyone we met had forged a different path. No one’s career was ready made. It was sobering in that respect. While we were there, high school felt distant, past, irrelevant. The future seemed present and full of possibility.

A2 The ELE was like google maps because we were able to see a big picture and then zoom in on a closer picture. By doing this we were able to see more of a path for people to take. (mixed - photography there – seeing more closely/ capturing ideas moments )

A2 This ELE was like a new beginning because I was given an opportunity to see math through a different lens. I was stuck in neutral with my wheel spinning. This experience opened my eyes to the type of teacher I NEED to be for the students of today. For too often, myself included, we as teachers forget that teaching is not one size fits all. There is no way a teacher can expose students to every type of learning opportunity. Teachers, especially the great ones, can foster the inquisitive spirit that is laying dormant in too many of our students. That is what I let drive my instruction now. I want to leave my students with the tools to be able to investigate, “What if...”
ARTISTIC ACTIVITIES

5 IES This ELE was like a blank slate (tabula rasa) because I prospectively did not know what to expect.

7 IES The ELE was like memorizing a poem. I don’t necessarily write about that particular poem or spend cocktail hours reciting it … but when I go to write, or to live in this analogy, which is sometimes to write, this poem I have memorized, informs my writing and my living. It’s there with me. The words. The symbols. The cadence.

7 IES was/is like the creative process and one’s journey to God … because it is a constant dance between observing one’s talents and inner art/culture in the mirror of the outside world! ;)

7 A2 The ELE was like google maps because we were able to see a big picture and then zoom in on a closer picture. By doing this we were able to see more of a path for people to take.

COSMIC/SPRITUAL/INEFFABLE

4 IES Undescribable So few other high school students did anything even similar

7 IES a synchronized flash of brilliant stars across the galaxy; we accomplished something which not only would many others not be able to do, but most wouldn’t be able to conceive of the idea in the first place.

7 IES The LA trip was like a time bend. We saw a glimpse of the future, a time after college, when all doors really would be open. Nearly everyone we met had forged a different path. No one’s career was ready made. It was sobering in that respect. While we were there, high school felt distant, past, irrelevant. The future seemed present and full of possibility.

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SEEING/VISION

4 NASA The ELE was like seeing a place for the first time because I was trying to take in every part of the experience at once.

5 A2 trying on glasses (when you needed them but did not think you did) and seeing so much more clearly than you did before. It was like the first time I finally started using “readers” for the first time and going “oh, that is what I have been missing."

7 IES The LA trip was like a time bend, We saw a glimpse of the future, a time after college, when all doors really would be open. Nearly everyone we met had forged a different path. No one’s career was ready made. It was sobering in that respect. While we were there, high school felt distant, past, irrelevant. The future seemed present and full of possibility.

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</tr>
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<tr>
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<td>5 <strong>A2</strong> This ELE was like coach Bill Belichick’s game-plan because it was so diversified and unpredictable as to the extraordinary impact that could and would be made at any given moment.</td>
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<tr>
<td>EXP SCALE</td>
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<td>EXP 1</td>
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<td>EXP 2</td>
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<td>EXP 4</td>
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<td>EXP 5</td>
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<td>EXP 6</td>
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<td>EXP 7</td>
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Table A.3. ANALOGY/METAPHORS CODED TO EXP SCALE

<table>
<thead>
<tr>
<th>EXP 3</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXP 4</td>
<td>Descriptions of feelings and personal experiences / self-descriptive; associative</td>
</tr>
<tr>
<td>IES</td>
<td>Undescribable</td>
</tr>
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<th>EXP 5</th>
<th>Problems or propositions about feelings and personal experiences / exploratory, elaborative, hypothetical</th>
</tr>
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<tbody>
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</tr>
</tbody>
</table>
**EXP 6** Synthesis of readily accessible feelings and experiences to resolve personally significant issues / feelings vividly expressed, integrative, conclusive or affirmative

**NASA** an unexpected breeze...it was refreshing to be able to meet with scientists to receive feedback on our curricular ideas and then have time to act on them as a small group.

**NASA** a shot of adrenaline because it broadened my understanding of climate research that continues to trickle down through my courses.

**A2** This ELE was like a vitamin booster shot to my love of teaching because I felt very invigorated and excited about how teaching my subject to my students could lead my students on so many varying career paths.

**NASA** This ELE was like an iceberg because there were many scientific, geographic and social layers to the topic of climate change. There is much more to it than just global warming. What we teach in schools, historically, is really just the tip of the iceberg of climate change.

**A2** a European vacation.... even though I was taking it all in, going from site to site, and was exhausted, I learned a ton while I was there.

**A2** This ELE was like going on a business trip because I learned about ways to engage my students and make their learning experiences more meaningful.

**A2** his ELE was like food for my soul because I needed to be nourished academically and professionally.

---

**EXP 7** Full, easy presentation of experiencing; all elements confidently integrated / Expansive, illuminating, confident, buoyant.

**IES** This ELE was like getting into the driver’s seat of a vintage Ferrari because at 16, all you want to do is hit the open road, and discover the world and be free to be yourself. ELE gave us that.

**IES** The LA trip was like a time bend. We saw a glimpse of the future, a time after college, when all doors really would be open. Nearly everyone we met had forged a different path. No one’s career was ready made. It was sobering in that respect. While we were there, high school felt distant, past, irrelevant. The future seemed present and full of possibility.

**IES** The ELE was like memorizing a poem. I don’t necessarily write about that particular poem or spend cocktail hours reciting it … but when I go to write, or to live in this analogy, which is sometimes to write, this poem I have memorized, informs my writing and my living. It’s there with me. The words. The symbols. The cadence.

**IES** was/is like the creative process and one’s journey to God … because it is a constant dance between observing one’s talents and inner art/culture in the mirror of the outside world! ;)

**IES** a synchronized flash of brilliant stars across the galaxy; we accomplished something which not only would many others not be able to do, but most wouldn’t be able to conceive of the idea in the first place.

**IES** was like a professional career workshop because it prepared you for the fact that curiosity, initiative and follow through can overcome big, hairy audacious goals.

**A2** The ELE was like google maps because we were able to see a big picture and then zoom in on a closer picture. By doing this we were able to see more of a path for people to take.

**A2** This ELE was like a new beginning because I was given an opportunity to see math through different lens. I was stuck in neutral with my wheel spinning. This experience opened my eyes to the type of teacher I NEED to be for the students of today. For too often, myself included, we as teachers forget that teaching is not one size fits all. There is no way a teacher can expose students to every type of learning opportunity. Teachers, especially the great ones, can foster the inquisitive spirit that is laying dormant in too many of our students. That is what I let drive my instruction now. I want to leave my students with the tools to be able to investigate, “What if...”
Appendix B

Semi-Structured Experiential Learning Events Interview Questions
by Ryan Goble

Please respond to the following questions about the ELE you participated in. Answer questions based on your memories of the ELE. There are no right or wrong answers - all types of feedback are valuable. Follow-up questions and more detailed questions will emerge based on your responses.

- In general, what do school systems value?
- What is a metaphor or simile you would use to describe the public school system. It is like …
- How does this metaphor differ from the metaphor you used to describe your ELE? Why?
- Do ELEs differ from “classroom learning? If so, how?
- Are there better ways to design ELEs?
- What were the tensions between the planned and unplanned parts of ELEs?
- Did the ELE impact thinking about teaching, learning and schooling?
- What was the perceived purpose of the ELE? Did it fulfill that purpose, why or what not?
- What additional help or resources would you have liked during the ELE?
- What additional help or resources would you have liked after the ELE?
- What, if anything, helped you after the ELE?
- How did peers, friends or administrators perceive the ELEs? Was there any praise or pushback?