



# UNBoxed

A Journal of Adult Learning in Schools

**INSIDE A SUCCESSFUL  
SCHOOL PROJECT**  
scott swaaley

**LOGS FROM  
SAN DIEGO BAY**  
tom fehrenbacher

**AFTER A PROGRESSIVE  
K-12 EDUCATION...  
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AT THE MET**  
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**RIGOR RECONSIDERED**  
rob riordan

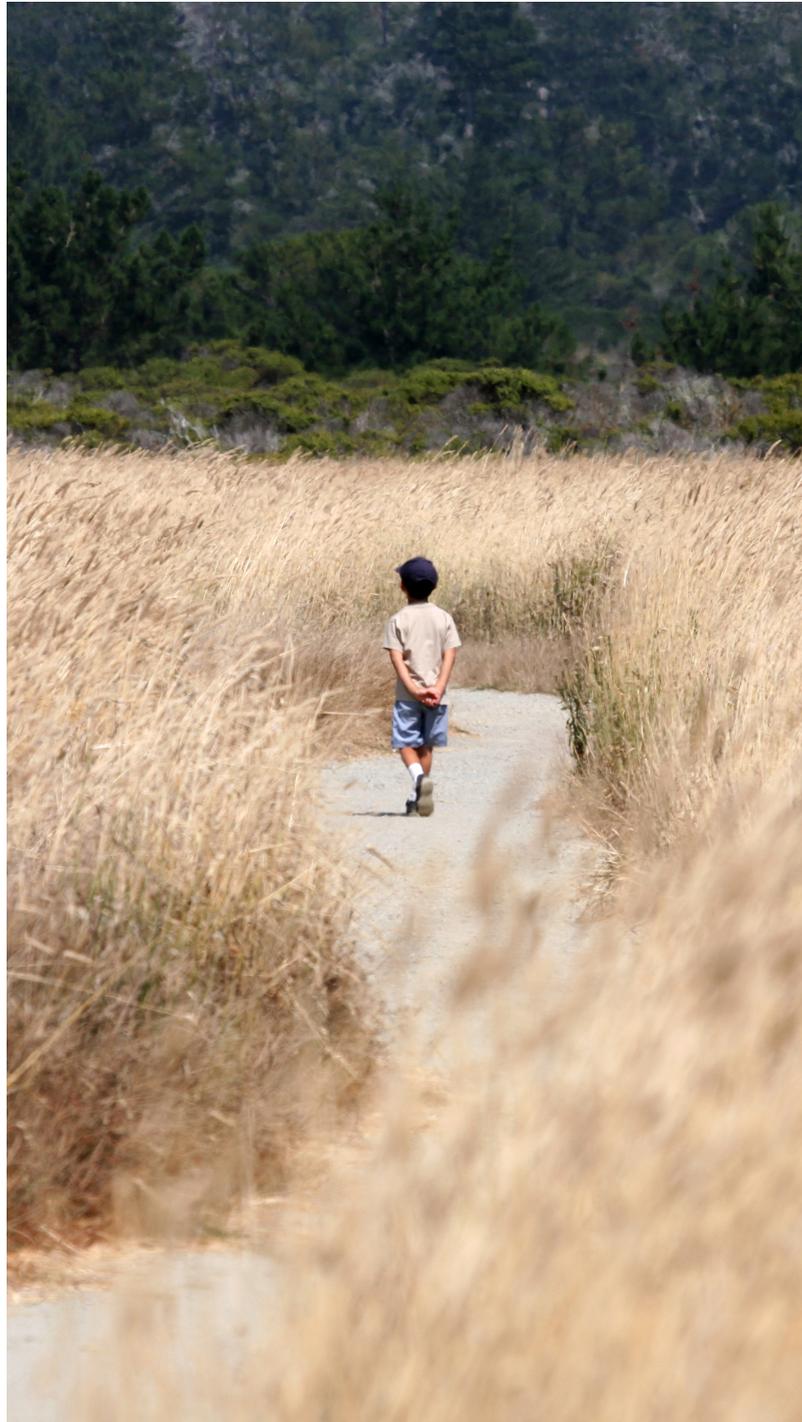


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A Journal of Adult Learning in Schools

Volume Nine, Issue Two  
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*Photo courtesy of Tom Fehrenbacher and Jay Vavra*

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# Welcome

*The Editors*

**W**elcome to another issue of UnBoxed! We hope you will enjoy this collection of essays, reflections and reports about passion, purpose and practice in education.

Luis Del Rosario, a student at the Met School in Providence, Rhode Island, addressed the themes of passion and purpose at a Deeper Learning conference at High Tech High in April 2015. We present his keynote address in its entirety, followed by a brief commentary from Rob Riordan.

Three of our contributors offer lively accounts from the classroom. Joanne Sith, reflecting on her life as a history teacher, challenges teachers to link passion and purpose in the “why-based classroom.” Scott Swaaley deconstructs “Apocalypto,” a complex, integrated history/engineering project. Tom Fehrenbacher, in a moving tribute to the memory of longtime teaching partner Jay Vavra, describes the evolution of a years-long study of the flora, fauna, and history of the San Diego Bay. Both Swaaley and Fehrenbacher emphasize the value of teachers collaborating on projects that both employ and transcend traditional disciplinary lenses.

Students may develop significant experience and expertise as designers and collaborators in projects and on internships, but will they be prepared to succeed in college? In interviews with first-generation college students from High Tech High and other schools, Heather Lattimer and Jean Kluver find that the question of readiness may apply both to students and to colleges themselves: “Is the challenge that we need to prepare students to conform to the expectations of traditional higher education? Or do we need to work with higher education to rethink how to make learning relevant and accessible for an increasingly diverse student body?”

What is the impact of particular principles and practices on college success and other outcomes, and how do we get better at what we do? Isaac Jones, Ryan Gallagher, Ben Daley, and Stacy Caillier describe an ambitious attempt, now under way in High Tech High schools, to adapt and apply methods of “improvement science” that have proven successful in health care and other fields. Nicole Assisi and Shelli Kurth offer ten principles for distributive leadership that fosters shared purpose, autonomy, engagement, and reflective practice.

The UnBoxed cards in this issue offer glimpses of projects and practices that we find inspiring. These cards are freely available on our UnBoxed website in a printer-ready format. Simply print, fold, share and discuss. Each card refers the reader to a web address for further information.

We wish to thank the K-12, university and other educators who have reviewed our submissions for this issue and offered invaluable counsel. We invite all of our readers to join us in conversations about teaching, learning, design and leadership by submitting your thoughts for publication or serving as a peer reviewer. To learn more, visit [www.hightechhigh.org/unboxed](http://www.hightechhigh.org/unboxed).

**Our next submissions deadline is Oct 1, 2015**

Read, enjoy, and participate!

—The Editors

# Logs from San Diego Bay

*Tom Fehrenbacher  
Gary and Jeri-Ann Jacobs High Tech High*

*These words are written in memory of Jay Vavra, my former teaching partner, who passed away in the fall of 2014. From the start, Jay expressed an interest in the relevance of my subject, the humanities, for his subject, biology. His eagerness to find connections resulted, not only in a prodigious amount of student work, but also in a journey for me of great personal and professional growth.*

**I**t all came about innocently enough. Mindful of High Tech High's commitment to integrated curriculum, Jay and I focused on a nearby body of water known as the Boat Channel. The Boat Channel was easily accessible, held possibilities for both of us, and seemed a good place to get the kids outdoors. Jay's transect studies of life forms along the Channel's banks went smoothly. However, on the humanities side, deciding just what role humans did have in nature and whether that role is "natural" proved provocative. Over the next ten years, many more of biology's provocative questions would arrive in my classroom.

By the end of our first year together, our students produced a field guide, *The Two Sides of the Boat Channel*. This first book contained



*Photos courtesy of Tom Fehrenbacher and Jay Vavra*

student descriptions of the Boat Channel's wildlife, results of transect studies, nature reflections, and poems. We used the book to apply for grants, which allowed us to extend our study to the San Diego Bay itself. Our interdisciplinary project would turn out to have a life of its own, resulting in a series of field guides over the years: *Perspectives of the San Diego Bay*; *San Diego Bay: A Story of Exploitation and Restoration*; *San Diego Bay: A Call for Conservation*; *Biomimicry: Respecting Nature through Design*; and *Invasive Species: The Unknown War*.

### Nature Deficit Syndrome

For the second field guide, *Perspectives*, we travelled by bus to the Bay's corners and coves. As the kids got off the bus, we noticed that some were in a state of bewilderment. Many stayed on the sidewalks away from water; they didn't feel home in all the sunlight and air. They didn't want to get their feet wet.

In talking with Jay about these students, I found out their reticence has a name: *nature deficit syndrome*. The syndrome occurs when we live shut off in rooms, breathing conditioned air, in front of screens and sleeping to the on/off switch of artificial light. By doing so, without even knowing it, our view of the outdoors shifts. We no longer feel we are a part of nature. Instead, we come to think we are separate from it and have dominion over it. Jay and his fellow biologists warn us this isn't true.

Nature deficit syndrome makes us oblivious to the actual state of the environment. And, insidiously, it makes us oblivious to its very existence. Teachers working alone in their separate disciplines are not likely to hear from the biologist in the building. Nature deficit syndrome is rarely heard of or talked about in education. For all the changes taking place in our environment, our indoor life keeps us dangerously blind.

For Jay and me this meant getting our students outside. It meant more field trips, not only to the urban parts of the Bay, but further south to the Chula Vista Nature Center where we could still see the Bay's surroundings untouched. We did more experiments in the field. At docks assigned to Jay by the Port Authority we dropped thick ropes into the water, later to pull up clusters of life, cataloguing the biodiversity.

We compared biodiversity across the Bay. We accompanied Fish and Wildlife experts, watching as thousands of native white sea bass were released back into the Bay. The students completed illuminated journals, sketching, describing and looking at the role humanity played in the landscape. We wrote poems about our observations.



Closer to school, Jay took early morning dives to collect sea urchins for the lab. He kept two locally found octopi in the class's aquarium; we named them and celebrated their birthdays. We had beginning and end-of-year team celebrations at South Mission Beach, swimming, eating and playing outdoors. We went to a plant nursery and bought native plants. We loaded them on to the bus and filled the bus interior with their mysterious fragrance. Once back, we planted a garden around the school.

### Shifting Baselines

Our next field guide, *A Story of Exploitation and Restoration*, brought other lessons. Jay, who was fond of the annual festival at Cabrillo National Monument, attending with our students and setting up a booth there, invited me to see the reenactment of Juan Cabrillo's arrival at the tip of Point Loma in 1542. Cabrillo was the first European to visit the San Diego Bay, and his landing is celebrated to this day. Given our topic, I had to go.

As I watched the actors' reenactment, debarking from their boat and stepping ashore, dressed in costumes, pantaloons for sailors, a black robe for the priest, and Spanish conquistador armor for Cabrillo, I wondered what the Bay would have looked like for them. From field trips, classroom maps, drawings, depictions and descriptions of the Bay over time, we found a different story. Things were not the same now as in Cabrillo's time. The very geography of the Bay had changed.

Since Cabrillo, the Bay has been dredged, cleared of eelgrass, and deep shipping lanes carved. Using the dredged materials, islands, causeways, and flatlands were built over mudflats and marshlands. The course of the San Diego River, which used to meander around the Presidio and sometimes toward Point Loma's tip, was blocked. High Tech High's nearby Boat Channel is all that remains of the former river's route.

The students and I came to realize that our school is located on top of land that once was along the banks of that river. When we expressed our surprise, Jay told us about shifting baselines, an idea from biology that points out the environment before us hasn't always been that way. Shifting baselines usually go unnoticed, the shifts happening slowly over great courses of time. Biologists are interested when a baseline shifts quickly; they look for the reason behind such shifts. San Diego Bay's rapid shift in baseline would come to interest us.



## Development or Exploitation

What could account for such a completely different Bay in such a brief time? This question brought humanities fully into the picture, as we looked to history to find an answer. We discovered that as hunter-gatherers, humans foraged across the globe for millions of years. Then, occurring relatively recently, some 12,000 years ago, we began to stay in one place. We were able to do this by digging up the soil and planting food. Known as the Agricultural Revolution, it would be the first in an accelerating series of significant technology-induced social revolutions.

We found the rise of agriculture encouraged the growth of patrilineal societies, specialized our labor, and required organized aggression. To this day, our militaries protect the crops, the village, and the homeland. When Cabrillo landed on Point Loma, a hunter-gatherer people found themselves under a series of invasions by societies with militaries and more technology. The outcome was predetermined; San Diego's native people, the Kumeyaay, were placed on reservations.

With the Kumeyaay displaced and the rule of Spain and Mexico replaced by the Americans, the San Diego Bay began its rapid shift. We already knew that it took more than shovels and wheel barrows to reshape our Bay. Old photos revealed dredgers, barges, and unloaders at work. History told us that machines made it happen. The world's next great change in technology, the Industrial Revolution, would not only transform the Bay, but everything from the way we grow our food, make our clothes and build our houses.

From history, students saw both the agricultural and industrial revolutions' significant impacts upon the environment. We found that our tools allowed us to do what we wanted without restraint. From marketing brochures, textbooks, and historical recounts, we witnessed the emergence of a language to cast our actions in a positive light. We "developed" the land, took advantage of "resources," engaged in "progress," and completed "projects." Our class discussions concluded that more mindful calls for caution, care, and conservation came off as uninformed and unprogressive.

## Sustainability and the Blue Marble

In the next field guide, *A Call for Conservation*, we asked why the terminology of development was all so positive, but its consequences not necessarily so. We asked why some interests can start out “developing resources,” only to have others point out they are actually “exploiting nature.”

This question brought us face-to-face with conflicting perspectives on the environment. It also brought us face-to-face with a great deal of information on the subject. New technologies were changing the speed and ease of communication and information processing. Data could be gathered, crunched, and made available from a laptop in the field. The environment, itself, was under discussion; the hive was humming and we had become a part of it. Welcome to the next technological revolution, the one going on right now, the Information Age.

For Jay, this meant students used GPS to track pollution, collected biodiversity data and distilled it in statistics programs, conducted zip code-dependent mosquito experiments, and recorded interviews with scholars and leaders in environment studies and the conservation movement. We produced and published our student findings within a year, shortening the publication delay in our last field guide, *Invasive Species: The Unknown War*, through direct electronic publication.

In humanities, we found the Information Age settled the argument about our net effect upon the environment. We are not developing, we are exploiting. There is some positive news: While climate change is real and produced by man, with enough global awareness and subsequent action, we can slow and reverse course over time. Scientists, long participants in the Information Age, have been sounding the alarm for years.

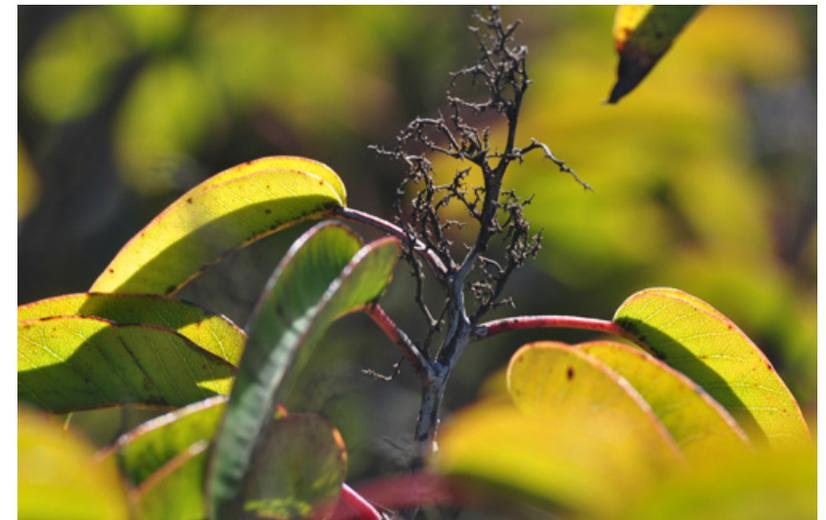
In 1972, Apollo 17 sent a photograph from outer space known as the Blue Marble. It shows a beautiful and fragile globe hanging in vast space. We realize from looking at this Blue Marble, that this is it. Except for sunlight pouring in, our lives are sustained within a closed and fragile system.

In producing *Biomimicry*, we wrote about how evolution works in this closed system through a process that inspires and sustains life.

As a product of evolution, humans are bound by its rules. We cannot expect our actions to go unnoticed. When a species does ignore them, as Jay put it, nature does notice. When an invasive species takes over an entire ecosystem, killing off the other life, the biologists call it “boom and bust.”

In completing the field guide *Invasive Species* students wrote about “boom and bust” and concluded that human tool use had extinguished a significant amount of life—that tool use enabled our own invasiveness. So, we decided to ask some questions regarding our survival in terms of tools. How could we better use our tools? What are nature’s design principles for operating in a closed system?

Students found something of survival guide by looking at how evolution goes about sustaining life on Earth. We found the tenets of sustainability: all energy is solar, all waste is food, and all life is diverse. The tenets of sustainability tell us exactly how life has always operated on this planet, and how it will continue to, with or without



us.

When we fail to respect nature through our designs or actions, we run right into what is known as the tragedy of the commons. We cannot as individuals, corporation, or nations exploit or pollute what is held in common, namely the land, the oceans, or the air and still be sustainable. A cost benefit analysis in terms of each sustainability tenet is essential for every step we take. There is no such thing as excluding

what business terms an “externality” in the final equation.

### **The Problem with Subject Matter Specificity**

Subject matter specificity, in schools and in the professions, lets us off the hook when it comes to the environment. This problem can be found even in project-driven schools when students aren’t asked to consider the connections, the cost or consequence, or the impact of their project on the environment. Later in life the myopia will continue, when specialists in the sciences and technology go ahead unreflectively with industrial projects masquerading as progress. Trained to be experts in only one field, responsible for only a limited perspective, specialists feel little to no professional compulsion to look for connections or to consider the consequences of their projects.

In working with Jay, I found out that addressing climate change requires contributions not only from those who study nature, but also from those who study humanity. After all, WE are the species causing it. In humanities, with climate change a settled fact, our Socratic Seminars focused more and more upon the nature of humanity itself. We asked an essential question about climate change: “How can we, as a species, while knowing this is happening, leave it largely unaddressed?” If we had not done so, I could not have looked Jay in the eye. Had humanities students not engaged in relevant social study, neither Jay nor I would have found their work authentic. And, by taking up social analysis, students found that our history, our literature, and the best in our culture can tell us a great deal about life, about living simply, and about sustainability.

So, while my work with Jay began through an interdisciplinary expectation, it led to an interdisciplinary responsibility. Over the years, we came together to negotiate the year’s topic, the field guide table of contents and chapter content. With our students we looked for connections, sought relevance and asked questions no matter where they led. In the field guide’s uncharted territory, our students found a place to raise their own questions and express their own ideas. We learned a lot from them. What started as a simple look at the local Boat Channel turned into a study of the Bay’s ecological history, which then became a consideration of the environment itself. In some sense, there was nothing planned about it.

Jay was fond of referring to our partnership as akin to that of the

scientist, Ed Ricketts, and the novelist, John Steinbeck, who worked together on *The Log from the Sea of Cortez*. The comparison to Steinbeck would give any humanities teacher pause, but Jay felt it held truth, perhaps enjoying the reference all the more for the reservation it raised in me. Jay did have a point about the importance of interdisciplinary work, though. None of these ideas and none of the student work and awareness found in our field guides could have happened without our academic partnership, or without our personal relationship. I have him to thank for this.



*The author(right) with long-time teaching partner, Jay Vavra*

# Knowing Why

*Joanne Sith  
High Tech High International*

**W**HY was a simple but rather frequent question that we innately and inquisitively repeated almost every day of our childhood. As young kids, we asked Why? We wondered about every aspect of our surroundings to provide a sense of knowing and to discover truths that wowed us. The whys put purpose into focus. We absorbed everything and had this insatiable yearning to learn more. And what we did learn from our Whys, we took in with much pride and happily shared with others.

## Losing Our Whys

Sadly, this inquiry loses its momentum as we grow up. We forget to ask ourselves Why and learning becomes a “chore” or a “must do” as we pass through the education system, particularly within secondary schools. Perhaps our schools are the culprits for our lack of curiosity; for decades what students gained in schools was rote memorization of facts that lacked a greater purpose and connection to the real world. Standardizations and exams were the dynamic duo that paraded themselves as qualifiers of intellectual proof and educational progress.

The school environment was and may still be as follows: Teachers are stressed to abide by the state standards in order to improve their schools’ test scores to then ensure that money flows into the schools so that then some of that money is allocated back into the classrooms, which inevitably recycles back onto the teachers’ shoulders to again feed facts and hammer test performance into their students’ brains. Take the previous sentence and just put it on constant repeat. Our classrooms behave like machines and our students are merely parts to this manufactured assembly of American education. If a part (student) malfunctions, we merely lubed it up with more facts and test prep or worst-case scenario just throw that part out. If a teacher falters in his/her ability to manage this mechanization, the end result is a loss of the job. Just like the Industrial Era deskilled man with its reliance on heavy machinery, our students and teachers are also being deskilled. Under this system, the most important dynamic duo, the teacher and the student, is being silenced by the roaring clamor of traditional standardization of education.

There is no room to ask the whys in this structure. It was built on input and output with no regard for reinvention and purpose. Therefore, the student questions “Why do we need to learn this?” or “What is the point of this?” have become the dominant topic of conversation in schools all across our nation. I remember feeling this exact way as a high school student sitting in all my AP classes. I wasn’t taking these courses because I was eager to develop my knowledge and challenge my academic skills; I took those classes because I needed to get into college. High schools became the arena for competitive warriors to outdo one another in order to win college acceptances. Those who didn’t care for those competitions were invested in athletics or became the “high school is not for me” type. This illustration of high school is not uncommon, and it dangerously misconstrues what learning means. In my own experience of high school, learning felt forced, more like a survival of the fittest mentality or like a rite of passage before “real learning,” or learning based on or curiosities and passions, can happen.

In this type of high school, there is no need for teachers to pass along creativity and ingenuity; the classroom has lost its purpose of what “Real Learning” is about. Let’s remember that high schools are established to help prepare our students for the real world. However,

at the rate we are going, we are modeling to our students that the real world does not need them to be critical, innovative thinkers but more like deskilled workers who accept what they are told to do. Contrary to this, the real world offers vast opportunities where we learn to create, learn to invent, learn to probe, and learn to ask why.

### The Why-based Classroom

As a student who grew up in the traditional standardized structure and who is now a teacher in a progressive project based charter school, High Tech High International, I have been lucky enough to experience the dichotomy of these two approaches to learning. From these experiences, I've come to realize that teachers are the best weapons to repurpose our failing education system. Teaching is an amazing profession that needs teacher autonomy in order to design learning opportunities to fuel all that “real learning” provides and the core of these moments begin with “Why.”

Although standardization hinders our natural curiosity and passions, it is also deeply ingrained in our educational system and won't be going away anytime soon. As such, the structures within any academic environment (whether it be state standards, project based learning, college prep, International Baccalaureate, AP curriculum, etc...) are ones that teachers have no control over. The pressure to teach according to these standards is present and unavoidable. Restrictions will always exist in any school setting: this is a fact. So as teachers, we need to adapt to what we have and manage our education design principles around them. Even within these restrictions however, a simple Why allows a teacher to take control of his/her domain and remodel the required standards around it.

The “Why” finds reason, places relevance, resolves dilemmas, and answers purpose. It challenges the teachers and students to participate in reinvigorating what the high school classroom is all about. A why-based classroom becomes an environment where both the teacher and the student are excited to collaborate and work together to achieve something above standards. It removes the mundane rigidity within the idea of high schools for both the teacher and the student. It gives life back to the high school classroom.

### Finding My Why

When I chose to ask myself Why after six years of teaching History, I was forced to really analyze the reasons why I teach US History. In my first few years, I assumed the norm was this: “I am a History teacher; therefore, I must teach History. Simple. I must get the students to understand and remember all the events that led up to the American Revolution and up to the complexities of the Vietnam War.” That was my objective. These were my self-inflicted academic restraints. My students enjoyed my class because I was a great orator of history, and the class activities were engaging and fun. But I felt like something was missing. As the years passed, I began to feel the drudgery of academic mechanization, even within the project based setting. Year after year, class after class, the history content and then even the projects began to feel like objectives/standards that I checked off every year.

The reason? In all this time, I had forgotten to ask myself Why. Why am I doing this? For the love of history? No, because I could have just become a Professor of History or better yet, found a job that pays well and just satisfy my inner history nerd by reading historical novels on the weekends. No, I needed to understand what I was attempting to do in my class. I wondered about why I was in the classroom and why I had chosen US History as the subject matter and even why I had chosen 11th grade. All these Whys encouraged me to contemplate the exact objectives I intended in designing my class.

So why teach and have my students learn U.S History? Oddly enough, getting to the answer was not as easy as I thought it was going to be. After I pondered this simple question, my thought processes were the following:

Initially, my response was that I want my students to understand the past and particularly connect that how we remember history really determines its meaning and impact. From there, I wanted them to grapple with the complexities of human nature and provide some context for modern day incidents of racism, discrimination, corruption, inequality, etc... But then I realized that up to this point of my Why exploration, it was still limited by just the “learning of history.” Instead, I wanted my students to take charge of what they learned by doing something with or sharing all that they learned. In

the end, my Why is this: *I want my students to be interactive and empowered young historians who can create change in this world.*

I came to realize that the purpose for my classroom was ultimately to instill within my students the identity of Progressive Changers. My Why re-energized the basic foundations of my class and most importantly my teaching practices and philosophies. The next semester, I was eager to share my Why journey with my new students and invite them to become engaged young historians who can create change and feel empowered to do so; I was so anxious in fact, that I pitched this idea to them before even going over the class syllabus. From all of the content we studied to every assignment/project we tasked ourselves, the Why mission was always the center of our objective. By acknowledging my Why, all the lesson plans, activities, projects, seemed to naturally fall into place and acted as supportive elements to build up my students' abilities to be Changers who are not afraid to ask Why. The why-based pedagogy became the driving force within my students and me and united us in our goal to share and do more.

### **The Impact of My Why on My Teaching**

For example, before my Why transformation, I taught a unit that covered the ethical issue of American Expansion. This thematic unit explored the many controversies of Manifest Destiny and the development of race relations within the Native American removal, the African slave trade, the Mexican territory, and the Chinese Exclusion. Previously, my students appreciated reading and looking into the reality of Christopher Columbus, analyzing the validity of the Willie Lynch letter, reading a first hand account of the Indian Removal Act, comparing side by side a 1911 and a 2010 textbook version of the Mexican War, and more. The historical reality intrigued my students but for all the interesting facts gained within this unit, I felt like the greater significance and application of the content was left uninspiring and impersonal. Keeping the Why at the center of my curriculum design, I had to ask myself: Why am I teaching this? What do I want my students to gain in order for them to believe they are interactive historians who can incite change?

So with the important theme of race relations in mind, I looked at my students' faces and I asked myself: If I were them, WHY would

I want to know this information? Realizing my students come from all different racial and socioeconomic backgrounds, I wanted them to not only understand history's impact on modern day, but also make history themselves by advocating for awareness. Race relations in American History has been the breeding ground for Discrimination, Hate, and Intolerance and its social behaviors get passed down from generation to generation. My students' personal lives are the very outcomes of history. This inspired me to take this unit into their personal lives and allow them to co-create their experience and share with their classmates the reality of their own race struggles within their communities.

Inspired to connect my students' lives to history's past, I needed an activity that opened that conversation to them. The outcome was an engaging, thought-provoking and powerful lesson around racial stereotypes. As my students wrote out all the stereotypes surrounding Blacks, Mexicans, Asians, and Whites, the class discussion naturally led into the destructive verbiage of the stereotypes and the historical backlash produced by the words. For my students, Stereotype Threat (the notion of a racial group being at risk of self characterizing and confirming a negative stereotype) was their largest Wow/Aha moment that affirmed the importance of understanding and personalizing history. From that point, it was as if all class projects and activities just naturally fell into place and my students were fully willing to participate and even lead.

This activity then easily transitioned into the Race Card activity, where my students bravely wrote out their own personal accounts of racial and discriminatory experiences. Before each class would start, I would read out loud 3-4 anonymous student stories and during these moments you could hear a pin drop in my classroom. These stories helped to not only put history into perspective but more importantly it also created a classroom culture of students who empathized and respected each other. These two class activities culminated into our semester long project called #Breakfree. This project was about using the advantages of the viral community like YouTube and Instagram to engage and encourage our viewers to "BreakFree" from the stereotypes that negatively affect them. My students took the lead in opening these conversations by posting photos of BreakFree moments on Instagram and also creating social experiment Youtube videos that

capture institutionalized practices of racism and discrimination. The student led promotion of #BreakFree enabled my students to become young historian activists that enacted Change.

### Student Impact and Responses

As with every new teaching method, I wanted to know if this redesigning of my classroom around my Why had any effect on my students. So I asked my students to anonymously provide their honest reflections about the class structure. The following quotes were some of my students' responses:

*“All the reflective activities we do allow me to dig deep in the feelings I didn't know I had and I'm really excited for the #BreakFree project because I think it's a great way to show/share problems or issues going on and do something to try and fix them.”*

*“All these race cards we listen to resonate with me. Even though I have not experienced the things they have doesn't mean it can't shock me. It means a lot to me that [my classmates] are willing to share the stories with the class.”*

*“I feel that I can take what I've learned and apply it to real life circumstances.”*

*“Lessons bring the small things into focus. It made me realize something that I haven't thought of before. It made me think about what I'm used to and whether or not it should be considered okay.”*

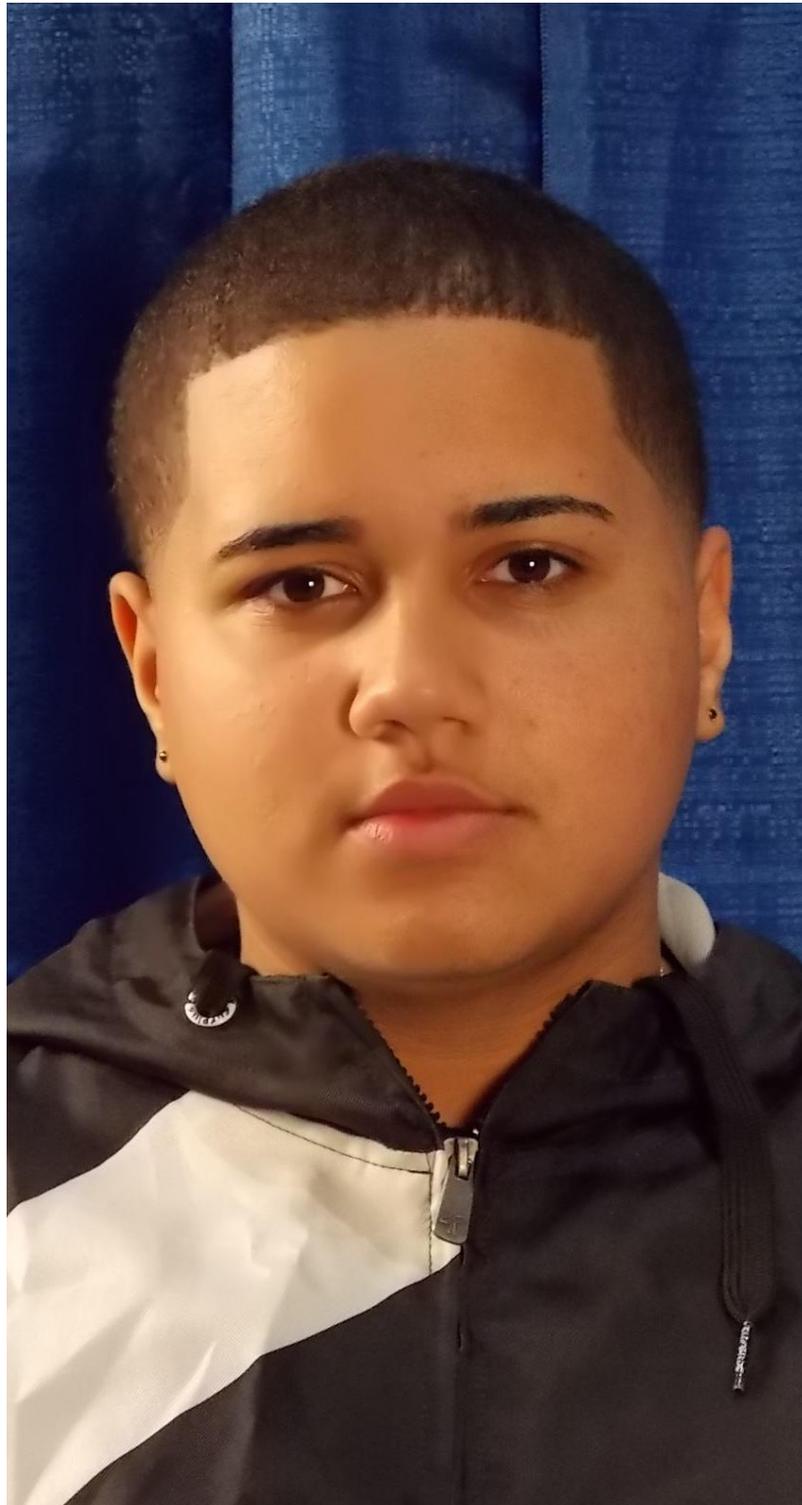
Additionally, since sharing my Why, my students will voluntarily email me with a YouTube video I should watch, cut out a political cartoon to give me, tell me the historical topics being discussed at the dinner table, voluntarily post above the required number of #BreakFree Instagram posts, and more. Significantly, what all these gestures have in common is that the student is leading the action and they are all occurring outside of classroom hours. For me, these student led moments definitely qualify as proud teacher moments. My students have implemented the key objectives of my Why that I shared with them on the first day of class. By opening the Why up to my class, the students were immediately bought into what this class

offered them and were happy to become more than just high school students in a history class but young members of society who have learned, engaged, reflected, and applied.

### Final Thoughts

Asking Why has pushed me to rethink and redesign many lessons to support my core objective and has acted as my overarching essential question. So simple is the question but the process of self reflection has incredible depth. It has encouraged me to understand and identify the very essence of why my content needs to be taught. The Why-based pedagogy promotes a form of education rooted in our basic need to understand and prompts a classroom of students who will be the next generation of change-makers, citizens who not only know how to ask Why, but also act upon its answers.

So I want to encourage all of you teachers to begin with a simple Why? Not why you are a teacher (that is a personal reflection that I am sure you have already processed) but why you are a teacher of your subject matter? Avoid the standard response of “Because I love the subject.” The goal is to design a classroom that promotes a larger purpose far beyond the facts of your subject matter and classroom activities/projects. Because when we start our class design with our why-based pedagogy, the students will naturally gravitate to learn in that same way. This approach invites the students to interact with the teacher's Whys and encourages them not only to participate but also to develop their own. It generates a vibe where students are learning about themselves and how that learning affects them. By sharing your Why, you are inviting your students into a world of purposeful learning. So ask yourself Why and see where it takes you and your students. Let's create a new generation of teachers and students who believe in remaking our classrooms into places where larger objectives are discovered and applied.



*Photo courtesy of Luis Del Rosario*

# My Education at the Met

*Luis Del Rosario  
Metropolitan Regional Career and Technical Center  
Providence, RI*

*In this keynote address at Deeper Learning 2015 in San Diego, the author describes how his pursuit of an interest developed into a thriving business, a passionate career pathway, and admission to the college of his dreams.*

**H**ello, my name is Luis Del Rosario. I am 17 years of age. Right now I am a senior at the Met High School in Providence, R.I., and today I am going to tell you how I was able to find my passions through sneakers.

Growing up as any kid in the south side of Providence, style and game was everything. I had several collections of sneakers before I ever had a collection of books in my house. Although I was a pretty smart and successful student in school, to most kids and me, school seemed like a place where you were just forced to go. The day-to-day culture was more of a social competition of who had this and who had that, than it was a place to learn. However, my curiosity in footwear came from more than just trying to impress my friends. I didn't know it then, but

it was the beginning stage towards building my aesthetic as a fashion designer.

Let me speak a little bit about where I am right now in my education. I came back to the States just a few weeks ago from volunteering to help build a playground in a small village named Zinacantan in Chiapas, Mexico. We created an entire playground made from recycled tires and other materials for a new community center that had just been built. A month from today, I'll be debuting my upcoming winter collection in my very first full fashion show at the Rhode Island Convention Center, where I'll be showing 20 of my original designs along with a gallery of my artwork. In two months I will be finally graduating high school, and in the fall, I'll be pursuing a bachelor's degree in Fashion Design.

I'd like to explain to you how in these past four years I was able to turn myself from not knowing where I was going in life into the person that I am today. Before I came to the Met, I didn't have that much engagement with what I was learning in school. The work was just numbers, facts, and memorizing answers. Most of the time I would bunk and leave early because I just wasn't engaged and had no interest in going to school.

In my first year of middle school, during our last recession, my family and I were going through a tough time financially. My mother's business got destroyed, and we were moving from place to place, even staying in people's basements, but when we did have a place to stay even if for a few weeks, my mom would drop me off to school every morning, and I would literally stand there in front of the school, waiting until she turned the corner so I could walk right back home. That's how much I didn't care—it came to the point where I just wouldn't go to school.

Eventually my mom started to catch on to what I was doing, and she just couldn't manage with everything that was going on, and while she was trying to get back on her feet, I was sent to the Dominican Republic to live with my father so I could catch up on school over there. That turned out to be just a waste of time, really, because I ended up not going to school while I was there either.

But of course, with actions like these come consequences, and I was facing the reality of having to repeat the 6th grade. However, when I

came back to the States, my mother made some phone calls, pulled some strings, and let's just say she got the job done so that I would go back to school the next year with my regular class.

Now, fast forward two years later. The first day I arrived at the Met, I was asked what I wanted to do with my life. When you're a kid you get asked what you want to be when you grow up, and you automatically say something like a doctor or a police officer. But at 14 when you have someone asking you serious questions like "what do you want to do with your life?" or "where do you want to be in 10 years?" or "What is your passion?" it takes more than a couple seconds to find an honest answer.

I couldn't think of an answer right away but I knew I had this one thing that I had built a curiosity and knowledge about throughout my whole life, and when I was asked again what I wanted to do with my life, I said I wanted to become a sneaker designer, not knowing that that moment of self-declaration would bring me where I am today.

From the start of freshman year, all students at the Met are required to find an internship that matches their interests. At the time I couldn't find an internship with a shoemaker, but I had the opportunity to join a college-level entrepreneurship program that was taught in our school's eCenter (the Met Center for Innovation and Entrepreneurship) to create a business plan and potentially start my own business.

Now let me say, coming into the Met and Big Picture from the traditional systems of education, when I was told I was going to write a business plan, pitch it in front of investors, and launch a business, I didn't think we were actually going to write a real business plan, pitch in front of real investors and launch a real business. I thought it was going to be just like a regular course where we were just doing things for practice. But let me tell you, going through that entrepreneurship program was one of the hardest, yet best things I've done as a high school student.

By incorporating my interests for design, I created a business plan for my own line of t-shirts with designs that featured QR codes on the sleeve, so when scanned it'll bring you to our website and tell you a short story of the t-shirt's design. I presented my business plan at

the Network For Teaching Entrepreneurship's Annual Business Plan Competition, where I came in third place and was funded enough money to launch the business. In the first month I sold about \$1000 worth of t-shirts, reaching a broad range of customers through setting up booths at conferences and directly selling in my community and online social media.

Let me remind you, only nine months before I had a vague idea of becoming a sneaker designer, and suddenly I had a full on business to run while I was still in my freshman year. It was a moment of self-awareness when I discovered I was able to combine my passions for fashion design and incorporate it simultaneously with a career in business.

As the school year progressed, I attended an after-school sewing program where I was learning how to sew and create my own garments. When summer came, my passion and commitment to fashion was expanding, and I was practicing everyday, so that when I returned to school in the fall, I could use the skills I had been gaining and apply them to take my business a step forward into a new venture that I called Austeris Alterations.

Unlike my previous business, where I was taking designs and printing them on t-shirts, in Austeris Alterations, as I became better as a sewer, I took unwanted garments from customers and redesigned them for a new look. I ran the business for about a year as it became more successful than the t-shirts, until I started to find new ways to further build and evolve my skills in design.

My first big step into the fashion industry was with my internship at Brown University's Rites and Reasons Theatre. There had been a student who had studied there from the Met, who introduced me to the director, who gave me the opportunity to work with the lead costume designer, Lisa Batt-Parente, during the season's play of Welcome to Wandaland. It was during this time that I started to become more serious about my education and skill as a fashion designer.

Working as an assistant to a costume designer taught me the importance of quality detailed work, as each costume was hand sewn to the actress's exact measurements. I remember sitting there for hours, hand-sewing

embellishments to a robe. And as I continued sewing stitch by stitch while still running Austeris Alterations, I noticed myself becoming better and better. I started excelling greatly in school and all I wanted to do was grow, so I explored other ways to learn. After research and a talk with my advisor Andrew, I enrolled in my first college class at the age of 15.

I was studying under two intensive fashion design certificate programs, one at the Rhode Island School of Design and the second at my dream school, one of the best fashion design schools in America, Parsons The New School for Design in New York City. I traveled every Saturday from Providence to New York City at 3 in the morning on the Greyhound bus to make it each week so I could study fashion design at Parsons.

During my time there, I had the opportunity of meeting Tim Gunn, the host of Project Runway who was the former dean of the fashion department at Parsons. After I told him a little bit about my work and the Met/Big Picture, he complimented me on my dedication and the concepts behind my designs. Eventually, one class led to two, then three, then ten, and as I continued to learn, my designs were becoming more sophisticated and more detailed.

I was doing research one day on some of today's most successful designers to get a sense of what they were doing at my age that I could use to my benefit. I discovered a month-long fashion design summer program at the OTIS College of Art and Design that Alexander Wang took when he was 16 in Los Angeles. I found out about it early in the year, and I began to raise money so I could have the same experience of intensively studying my craft for the entire summer.

After that experience of using industrial sewing machines, creating elaborate fashion illustrations and professionally constructed dresses, as my skills noticeably increased, I felt like I was at a point where I could begin selling custom pieces to customers, made by me. So I transformed the business once again to now offering handmade custom women's wear of my original designs.

This development into making handmade couture led me to a new internship, which I still attend, with a fashion designer, Angela

Zampbell, where I first started out as a sewer in her wholesale and retail productions. Now in return for my services, I am able to use her industrial equipment as an open studio to create my own collection for my upcoming show.

If it hadn't been for the Met and Big Picture I wouldn't have been able to go through so many transformations and discoveries within myself that have allowed me to find my true purpose and gift in life. I am grateful that I am able to learn in a space that encourages me to branch out and discover new ways to learn and to take what was a small interest in sneakers freshman year into now, four years later, building my career as a fashion designer.

I am grateful that I am at a school where sewing can be considered just as important as any other course. And it's not just me. There are hundreds of kids who are all following their passions and doing great things at the Met. I have a friend in my advisory who just came back from teaching a business course in Dubai. He wants to become an architect, and he'll be off to USC soon. I have another friend who's raising money to teach Zumba classes to schoolchildren this May in Trinidad. With all the different things that each of us do, we were never told that it was impossible, and this is what the Met/Big Picture structure has allowed us to do: to think big and always keep going. And to me, that's the purpose of an education.

The best thing of all is that last week I found out I'd been accepted into my dream school—Parsons, The New School for Design. Thanks to the Met and Big Picture I'll be the first in my family to earn a college degree.

Thank you.

# Rigor Reconsidered

*Rob Riordan*

*High Tech High Graduate School of Education*

In his keynote address at Deeper Learning 2015, Luis Del Rosario offers a case illustration of deeper learning—self-directed, driven by interests and passions, facilitated by expert mentors, and transformative. His learning proceeds stitch by stitch, mentor by mentor, venue by venue. His course of study turns traditional structures and subject matter inside out, calling into question conventional notions of rigor.

School as “a place where you were just forced to go,” and where the curriculum consisted of “numbers, facts, and memorizing answers,” didn't work for Luis. What did work for him was a place where educators asked, “What is your passion?” and, as a matter of course, helped him pursue that passion in the world beyond school. What did work were the training in innovation and entrepreneurship, the internship with a costume designer, the long hours he spent perfecting his craft, the talks with his advisor, the college courses, the 3 a.m. bus rides to New York, and the conversations with experts in the field.

This is where rigor resides—not in complexity of prescribed content, or persistence in meaningless tasks, but rather in the moment-to-

moment decisions students and teachers make, and the dispositions and relationships they develop, as they pursue their interests and passions in the world. Luis and others like him challenge us to develop a new set of rules for rigor:

No rigor without engagement  
 No rigor without ownership  
 No rigor without exemplars  
 No rigor without audiences  
 No rigor without purpose  
 No rigor without dreams  
 No rigor without courage  
 AND  
 No rigor without fun

When we learn—really learn—we transform the content, the self, and the social relations of teaching and learning. We develop internal standards and align these with the world in the interplay of passion, mentoring, inquiry, and creation. A rigorous enterprise, yes, but also a joyous one, and venerable—happiness in the pursuit of excellence, as Aristotle might say. Or, as Luis would say, “think big and always keep going—that’s the purpose of an education.”

# 10 Principles to Move Your School Toward Distributive Leadership

*Nicole Assisi and Shelli Kurth  
 Thrive Public Schools, San Diego CA*

**T**he hardest part about teaching (well) and leading (well) isn’t creating meaningful learning moments for people; the hardest part of leading and teaching (especially in a school focused on deeper learning) is **giving up control**.

Giving up control is the key to finding success as a leader, teacher and even parent in a school. First and foremost, you must trust the people around you. For teachers, that means giving the right tools to students, and then trusting students to drive their learning. Parents must trust in this new paradigm for learning and trust in the school leaders.

But administrators may have the trickiest part to play—they must share the leadership role, and trust “their people”—their students, teachers, parents. This distributed leadership approach is a collaborative effort undertaken between people who trust and respect each other’s contributions. By using principles of distributed leadership, school administrators can empower people to make great decisions, learn from mistakes and reach new heights.

Here are our 10 guiding principles for schools moving to a distributive leadership structure. (They're inspired by the awesome leaders and colleagues with whom I share this work!)

### **1. Everyone is a Novice and an Expert**

Resist the urge to make some people knowers and other people learners. Everyone has something to learn, and everyone has something to contribute. Make this clear to all on the team and remind them often of this fact.

### **2. Embrace ALL Parts of Entrepreneurship**

Educators love the idea of fostering entrepreneurship, but often forget that part of being an entrepreneur involves making mistakes. Taking leadership risks that sometimes end in failure is a natural way of learning to do better and reaching new heights. In fact, when you get something right, one brain synapse fires; but when you get something wrong, TWO synapses fire. So we shouldn't be so worried about making mistakes—rather we should use them as stepping stones to greater learning and increased success.

### **3. Know the Vision and Share it Often**

If people know where they are going, how they get there is irrelevant. Like a flight to Italy—you don't really care what flight plan the pilot makes, just as long as you land there. Allow your teachers to create their own flight plans, but make sure often that YOU KNOW and THEY KNOW where they're landing! At our school, we spend a lot of time talking about our shared vision. Then we spend even more time mapping our path. People can map their own path once they are crystal clear about where they are headed.

### **4. Give People Voice and Choice**

The choice on how to arrive at a location (see above) is vital to people truly believing in their work. If you have set the vision clearly, then people will choose whatever path is best for them and for students. Trust them to do so and check in to find out what they need. When checking in, make sure you hear all voices. Giving "voice" doesn't mean every decision is democratic, but it does mean that everyone gives input and all input is valuable. Ask yourself, "Have I heard from everyone?" If not, figure out a way to get more voices—or find out why folks aren't talking!

### **5. Systemic Autonomy**

To build autonomy and empower your team, you must have systems in place that support self-direction. Autonomy done well is not careless; it is thoroughly thought out, intentional and sustained by the structure and systems you create. For example, rotate leadership responsibilities, like facilitating a school-wide meeting, so every person gets a chance to set the agenda and take responsibility for the conversation about the school and its needs. Another system might be setting up budget line items for each staff member. By giving some budget control to individual team members, they have the opportunity to buy what they need when they need it. Trusting that your staff knows what the organization needs empowers them, builds autonomy AND distributes the leadership in the school community.

### **6. Hire Well**

Don't ever shortcut hiring! You are creating a team—get everyone involved—staff, parents, and students. Including all stakeholders in the hiring process ensures a shared responsibility and commitment to the school vision. Dynamics and culture will make or break specific projects. (If you want to know why, see number 4.)

### **7. Get Out of the Way: Don't Micromanage!**

Teachers are entrusted with the lives of children every day—a task none of us takes lightly. We expect them to protect, teach, and care for kids, so why is it so challenging to trust them with other decision-making responsibilities? As leaders, we must let our teachers step up, take control, make mistakes, course-correct and manage their classroom budgets accordingly. We trust them with children; the other things are small in comparison!

### **8. Allow Opportunities for Assessment**

A big part of distributing leadership means checking in, evaluating, reflecting and assessing. We do this naturally with students, but often forget to do so with adults. Reflecting on strengths and finding opportunities for growth can happen often and with a kind-but-discerning eye on school vision and student success. Self-assessment, 360-degree evaluations and feedback cycles are all part of assuring that people are doing what they can and are receiving the support they need.

# Project Gallery

## 9. It's about Skill and Will

Help people on your team find their passion and make their mark. Provide training and opportunities, create individualized professional development plans and create plenty of instances for stakeholders to share their expertise. Building a team of passionate experts is an intentional and ongoing project.

## 10. Celebrate Small Victories

Make success—big and small—visible and irresistible. People want to be recognized for their great work (even when they say they don't). And by celebrating great work publicly, you will attract people to the success party (and the school). Everyone likes to be on a winning team; we all want to do what is best for kids, so make all of the great things that are working public!

In the end, all your hard work boils down to trust. Trusting yourself. Trusting the kids. Trusting the adults. Trusting the messy and sometimes chaotic process that is inevitable in a learner-centered field. And finally, trusting your intuition.

We promise you that in the end, your patience and trust will pay off.

### Further Reading:

Allen, D., & Blythe, T. (2004). *The facilitator's book of questions: Tools for looking together at student and teacher work*. New York: Teachers College Press.

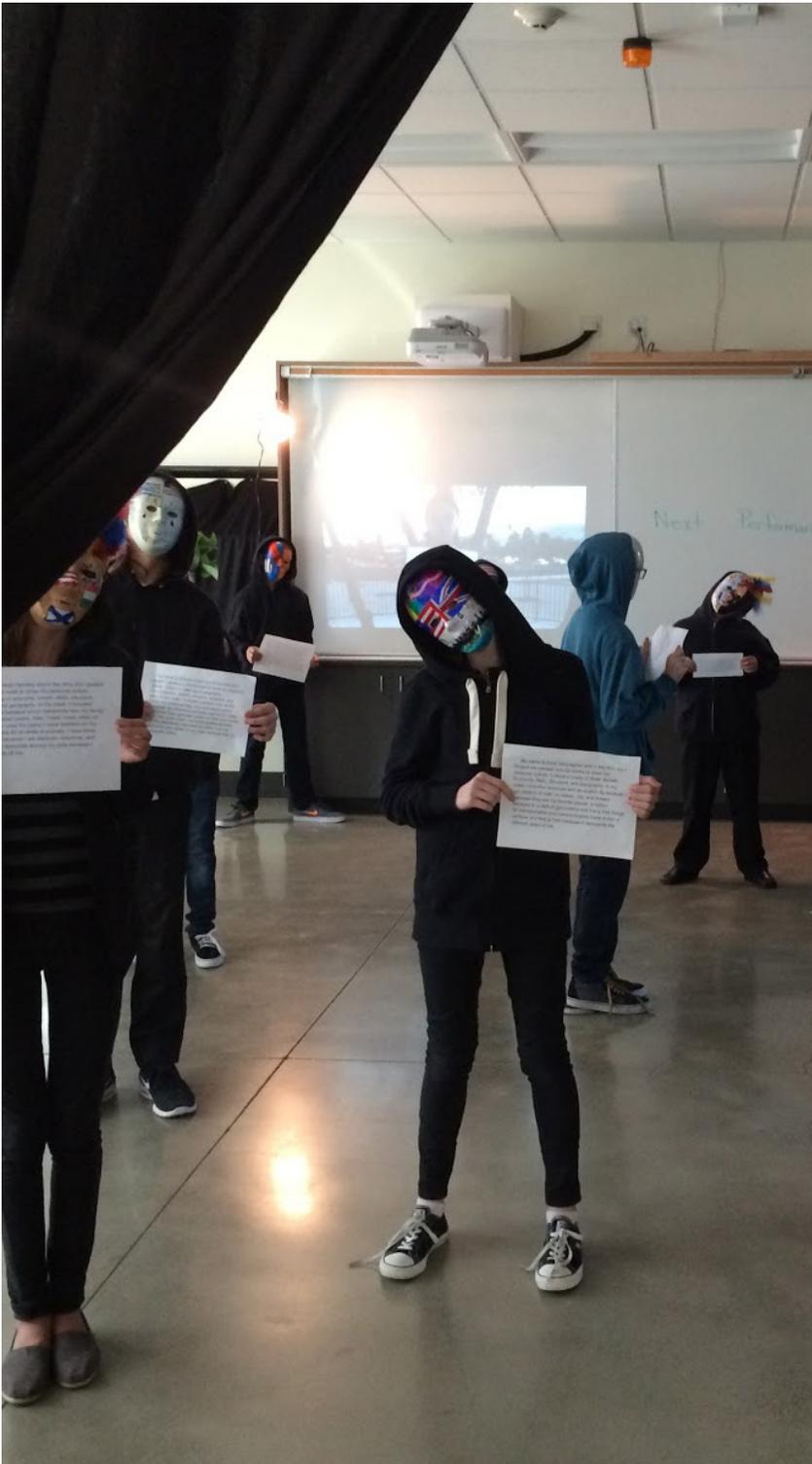
Covey, S., & Merrill, R. (n.d.). *The speed of trust: The one thing that changes everything*.

Hunt, J., & Nhlengethwa, S. (2009). *The art of the idea: And how it can change your life*. Brooklyn, NY: PowerHouse Books.

Hutchens, D. (2000). *The lemming dilemma: Living with purpose, leading with vision*. Waltham, MA: Pegasus Communications.

Patterson, K. (2002). *Crucial conversations: Tools for talking when stakes are high*. New York: McGraw-Hill.

In this gallery, we offer a set of *UnBoxed* “cards” that provide quick, concrete glimpses of projects we find inspiring and practices that support teaching and learning. These cards are now freely available on our *UnBoxed* website with additional teacher and student reflections, in a printer-ready format: <http://www.hightechhigh.org/unboxed/cards/>. Simply print, fold, share and discuss. As always, each card on the website refers the reader to a web address where further information is available.



## Who Am I?

*Corey Clark, Humanities and Kristen Voss, Math/Science  
High Tech Middle North County*

In this interdisciplinary project, students examined several different facets of their identities through multiple lenses and explored the implications of their identities and the prejudices that exist in the world around them. By exploring how their genetics shaped their identities, they were able to further understand why they are the way they are. The students put together several different products for exhibition; they created infographics highlighting how they received one of the traits that make up their identities, used photoshop to alter iconic images to change the public's perception, wrote short narratives in the form of their actual fingerprints describing pivotal, defining moments in their lives, and created masks to represent aspects of their culture. The classrooms were completely transformed into a gallery/performance space. Along with their other final products, the students collaborated to create a performance piece exhibiting some of the aspects of social injustice that they explored throughout the project.

### Teacher Reflection

This project turned into such a meaningful experience for us all. Because the project was completely interdisciplinary, connections were made that wouldn't have happened otherwise. We launched this project by visiting the Museum of Tolerance and discussing what causes social injustice, which led to our exploration of identities. The timing of the project allowed us to bring in difficult issues like Michael Brown and Eric Garner which gave the entire project a larger sense of significance.

### Student Reflections

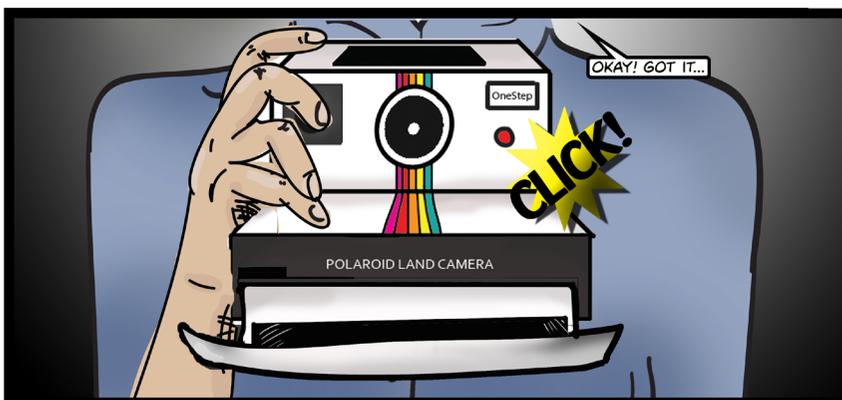
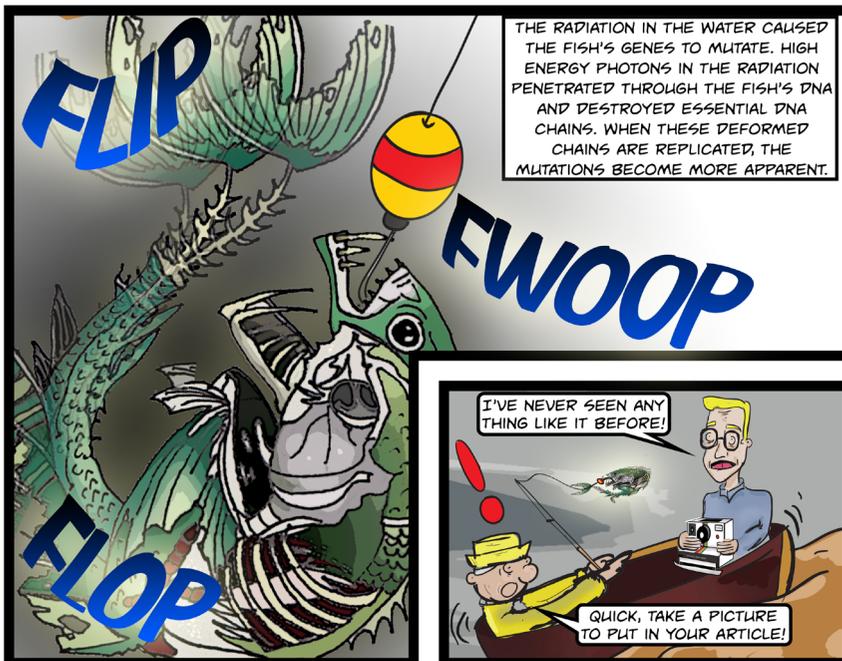
The most impactful experience was learning about social injustice past and present and how it is still affecting us now. It was something close to heartbreaking for me. —Henna Hall

This project was very impactful, defying stereotypes in a way that put you in awe...it opened my mind. —Matthew Mau

*To learn more about this project and others, visit <http://kvwoss.wix.com/digitalportfolio>*

## Subatomic Black Hole Soup: A Graphic Novel Project

Andrew Gloag, Physics and Kelly Williams, English  
Gary and Jeri-Ann Jacobs High Tech High



For this project, seniors explored the task of teaching a complex physics concept in a compelling way through the medium of a graphic novel. Students began by investigating various modern physics topics ranging from time dilation to black holes while simultaneously studying storytelling and the graphic novel. Students read nonlinear texts like Vonnegut's *Slaughterhouse Five* and then studied various graphic novels like Moore's *V for Vendetta*. We also partnered with a local comic book studio and had a comic book artist mentor students throughout the process. Our team ultimately created four graphic novels that taught difficult physics concepts in an accessible and engaging manner.

### Teacher Reflection

A unique aspect of this project was the grouping. Students were in larger 'graphic novel' groups of twelve where they had to develop a story based upon their physics concept. The exchange of ideas during this phase was amazing to watch. Students then paired up within those larger groups and were responsible for creating one of the graphic novel chapters, which forced them to communicate, critique, and have a sense of responsibility to the larger group. We liked how this mimicked working collaboratively in the real world and allowed for student voice and choice. Getting hands-on with the big concepts in modern physics is a challenge, and we wanted to create an authentic project based around them. By becoming experts on their topic and creating their novel, students were able to demonstrate knowledge and teach others through the work they created.

### Student Reflection

This project allowed us to produce an enthralling scientific graphic novel. We learned the fundamentals of comic book writing and how to draw action packed scenes using a variety of shots. Overall, students had to work alongside their neighboring chapters to create an engaging, cohesive story. —Delilah Nichols

To learn more about this project and others, visit <https://sites.google.com/a/hightechhigh.org/test-site-17/home/projects>



## Run Like A Girl: Don't Judge Me

*Jeremy Manger, 3rd grade*

*High Tech Elementary North County*

Recently, I asked my 5-year-old son “what does it mean to act like a girl?” He told me that girls play “nice things,” and boys play “bad things, like rough games.” I brought these issues to my class. Students observed and interviewed their peers from kindergarten through high school to study the social norms and common stereotypes that exist within our school community. Through reading and reflection, students explored their own identity and the stereotypes that define (or don't define) them. Each student kept a blog and wrote a memoir about a time she felt mistreated. A mixed media artwork was created and students wrote several six word memoirs that conveyed a message or a final reflection. As a culmination, students were challenged to teach their community the lessons that they learned. The class decided on four final products: producing and presenting a play, raising money to fashion their own t-shirt design and silk screen printing them, inventing Friendship Fridays and creating a short film about the process, and building a website to streamline our products ([www.htencsocial-stereotypes.com](http://www.htencsocial-stereotypes.com)).

### Teacher Reflection

I am proud of my students' ability to ask difficult questions: How should girls act? How should boys act? Are boys and girls really that different? What is gender, and why do we separate girls and boys? Yet surprisingly, this work did not bring us closer initially. We bickered more. For example, one day, a game of tag turned into a fierce game of girls versus boys that ended with several injuries and lots of crying and calls home. It seems as though our thoughts changed and became better articulated, but our behaviors remained unchanged for the time being. The process was indeed messy, but our questions were answered and our work continues to change the negative stereotypes that exist in our community.

### Student Reflection

What I learned during this project is that we shouldn't judge other genders. We're all humans. —Matteo

I learned that it is hard to make a website by yourself, but easier with friends. —Matias

*To learn more about this project and others, visit <http://mrjer->*



## Response-ABILITY: Empathy in Action

*Michelle Sadrena Clark and Shani Leader, 11th Grade  
High Tech High North County*

Few people recognize or understand the conflict and crisis that result in refugee populations, and fewer still know what challenges refugees face in their adopted country. Students had an opportunity to intimately learn about the refugee experience and demonstrate empathy in action. They read autobiographical narratives, listened to refugee guest speakers, and conducted in-depth interviews of high school-aged refugees in San Diego county, then utilized that knowledge to create professional quality art, spoken word poetry that culminated in an arts and poetry festival. Refugee students shared their testimonies, HTHNC students performed their poetry, and their artwork was auctioned to the highest bidder. All of the proceeds from the silent auction were donated to the International Rescue Committee's Peacemaker Scholarship Program.

### Teacher Reflection

I can honestly say that this project has been the most meaningful of my career. It involved transformative learning for all participants, and fostered visible and lasting empathy among students. This was a special project because pride literally emanated from the room the night of our exhibition. There was not a dry eye in the room, including mine. Students knew that their work had an authentic purpose, one that affected real people, which impacted their motivation.

### Student Reflection

Before this project I wasn't aware that there are refugees living in San Diego. I always assumed that San Diego was full of middle-class people, not refugees from war-torn countries. During the exhibition, I purchased one of the paintings of the refugee I interviewed, Myo, and gave it to him as a gift. I've given tons of gifts in my life but none felt as good as giving the painting to Myo. I learned a true sense of what it means to give and I think that is more valuable than any factual knowledge out there. —Grady

*To learn more about this project and others, visit <http://thedifferencemaker.weebly.com/response-ability-empathy-in-action>.*



## 2084: Junk Puppet Theatre

*Jeremy Farson, Art and Pam Baker, English  
High Tech High International*

The novel 1984 is considered by some to be prophetic, but in many ways it was just Orwell taking some of what was happening in his world to a logical extreme. Often in dystopian societies, the original intent is good, but when taken too far becomes harmful. Our project goal was to challenge students to think about the current controversial issues they were researching, while also reading Orwell's novel and then to imagine how these topics might develop in the coming future, whether good or bad. Next, they collaborated to create a future world and characters who exist in this fictional setting as the basis for their own short story. Finally, in small groups, students chose just one of their stories from which to create a screenplay for a narrated, "Dystopian Junk Puppet Theater Video" where they constructed the environment and characters mostly from recycled materials.

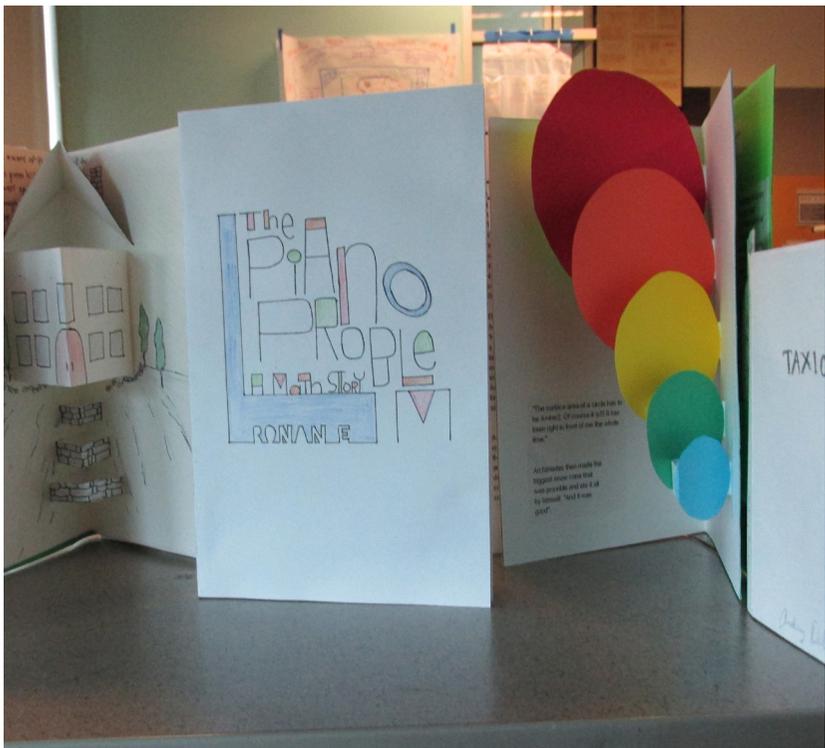
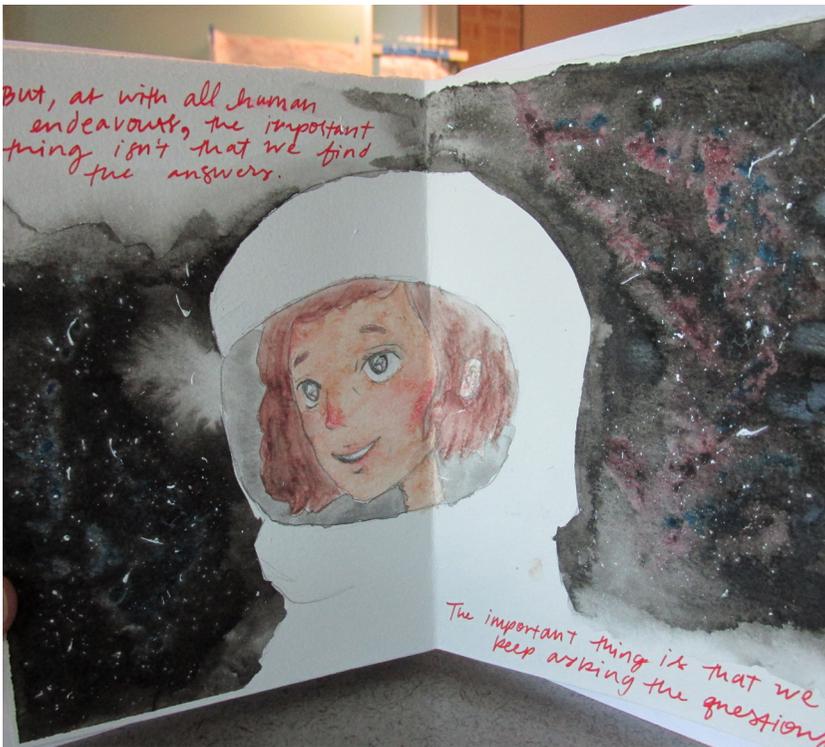
### Teacher Reflections

Through the multiple layers of the process, this project built upon and pushed student understanding of dystopian societies and how and why they occur. By laying a foundation of understanding through our reading of 1984 and bringing like concepts into contemporary society, students came to view current topics through a different lens, one which allowed them to place a current issue in a sci-fi world with a cast of characters of their own making. Additionally, the level of student engagement in writing was heightened by concurrently creating and producing their puppet theater. Both imagining their story and seeing it come to life as a physical artwork helped to push and strengthen their vision, ultimately deepening the conceptual aspects of the project's goals.

### Student Reflection

Have a great idea is one thing, but reenacting it and making the puppet show look professional was a challenge, requiring time, effort, and patience. I really enjoyed the collaboration, creativity and freedom we had in designing our puppets and backdrops. —Eric

*To learn more about this project and others, visit <http://jfarson.weebly.com/junk-puppet-theater.html>*



## Once Upon A Prime

Mele Sato, 11th grade Mathematics  
High Tech High Media Arts

What role did mathematics play in defining history? How did war, famine, and social revolution shape the lives, creations, and advances of mathematicians? How did these events change their perspective of their work and how did they play a part in shaping our history? Students offered answers to these questions in the form of short, narrative non-fiction stories which were glimpses into major moments in the lifespan of mathematics and in the lives of the mathematicians whose innovations catalyzed those moments. After studying paper folding and circle related theorems, students learned the basic elements of creating pop-ups before then teaching these newfound skills to HTMMA 7th graders. Combining pop-ups with their own illustrations and original stories, the students handcrafted books that brought their characters, history, and mathematics to life.

### Teacher Reflection

The biggest motivation for this project is my love of storytelling and learning about mathematicians during their most defining moments. I have heard so many fascinating stories of mathematicians. To help shape their writing from an essay to a story I asked questions like, “What was it like living at that time?” “How would she have gotten from Berlin to London to speak at the symposium?” or “How would you have felt if your life’s work was considered blasphemy?” Every year I learn something new from reading my kids’ stories that pull me into the often esoteric world of mathematical history. Through their narrative skill, thoughtful research and perspective-taking, the work of my students hooks me every time, and makes me wish the story would never end.

### Student Reflection

Math projects don’t always have to be about showing your work to a really complicated word problem, they can be about learning the history of math, learning how to apply the concepts, and having fun with the stories behind the concepts. —Frida

To learn more about this project and others, visit <https://sites.google.com/a/hightechhigh.org/math3/projects>



## Town Squares: A San Diego Neighborhoods Project

*Maggie Miller, Mary Williams, and Gary Gould, 6th grade  
High Tech Middle*

Students at HTM are selected through a lottery system and come from every zip code in the city. Our team chose to use photography and writing to explore the wonderfully diverse neighborhoods that make up our school and town. We learned about elements of photography from Outside the Lens, researched the history of our neighborhoods, took many photographs of where we live, interviewed several residents, and wrote our “One Neighborhood, Three Things” to describe three places that are unique and special to our neighborhood. Our final artistic piece was a canvas “square” of our favorite photo accompanied by a unique phrase both carefully chosen to represent our neighborhood. We exhibited our work at the Outside the Lens gallery for the “Friday Night Liberty” art-walk where students were able to share their photography and writing with the public.

### Teacher Reflection

It was interesting to see the students explore their communities and capture some amazing perspectives through photography. We all learned a lot about the history of San Diego through their research. Many students really took the opportunity to see and describe familiar places in new ways. It was awesome to see students’ pride as they exhibited their photography in a “real” gallery space, and the wonderful diversity of our school and city was evident in the collection of final photographs.

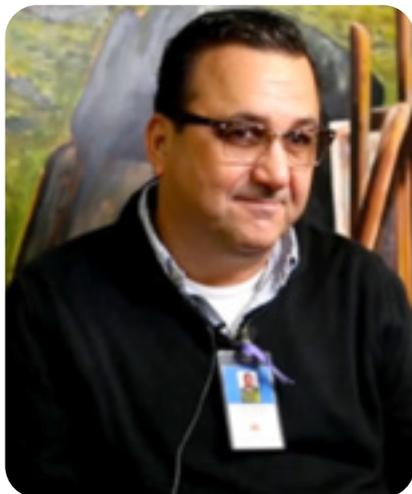
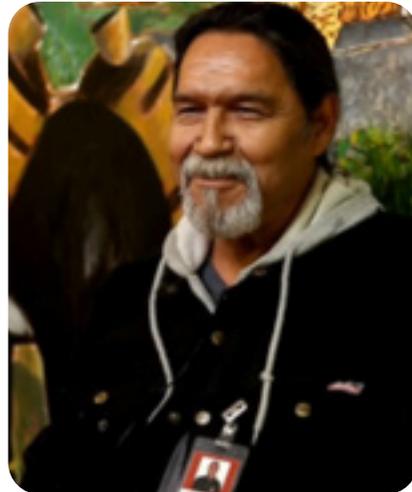
### Student Reflections

I found out a lot of good things while I was writing about my neighborhood because before I had always thought my community was a bit boring.  
—Natasha

I learned a lot about OB’s past and I also saw my neighborhood with different eyes as a photographer.  
—Elle

What I liked about this project was how we got to see where everyone lives in San Diego.  
—Regan E

*To learn more about this project and others, visit <http://millerwilliams.weebly.com/projects.html>*



## A New Life

*Tony Spitzberg and Emily Mayer, 7th Grade Humanities  
Innovations Academy, San Diego, CA*

“How can we tell an interesting story that helps people understand our community?” was the essential question that drove the creation of the student-produced documentary, *A New Life: A 7th Grade Video Journalism Project*. Students began by researching the countries of the refugees and immigrants that they would be interviewing at La Maestra Community Health Center, an organization that assists refugees and immigrants who are new to the United States. The students then analyzed the techniques of professional interviewers, formulated interview questions, conducted interviews and studied video editing to produce the film. They held a premiere of their powerful documentary for a large audience, and saved the front row for the subjects of their film who attended as the evening’s special guests.

### Teacher Reflection

What began as interest from students to produce a documentary of familiar people in their lives quickly morphed into something much more profound: a desire to tell the stories of others with very different backgrounds from their own. The students sought to explore and understand the challenges these individuals experienced in an attempt to seek a better life. Students transformed into photographers, interviewers, authors, journalists, sociologists, researchers and documentarians as they sought answers. Their film—the culmination of countless hours of research, practice interviews, and editing—became secondary to a deeper understanding and appreciation for the plight of those who come to America in search of a new life.

### Student Reflection

I want people to watch our documentary and take away how lucky we are. There are a lot of people in other countries who don’t have nearly as many opportunities as we have, as much stuff as we have, and as much education as we have. We can really do great things with the opportunities we’ve been given in our country.

—Julia



## The Upcycle Project

*Pat Holder, Humanities and David Bergren, Engineering  
Gary and Jeri-Ann Jacobs High Tech High*

This project had the broad goals of recognizing and confronting our environmentally adverse consumption and production cultures that are entrenched in practices of planned obsolescence, materialism and disposability. Our team worked in groups to identify and design products for local non-profit organizations, each conceived as a response to a real problem they had. Upon finalizing our designs, each group gathered waste materials and adjusted their plans to integrate them before prototyping and actually building the upcycled products. From benches to cat trees to cabinet doors, each group was successful in making a socially and environmentally positive contribution to a group working in our community. Further, each group worked to archive the process of their work by contributing a section to our team-wide publication highlighting the design processes, environmental considerations, community interactions and physical and philosophical practices that we explored.

### Teacher Reflection

Having local non-profit organizations as our customers lent real authenticity to our project. Designing around real problems that they had created genuine purpose for the diverse things that we built. It was also a great motivator to know that they were counting on using our products for the work that they do. Documenting the entire process of our work offered a thorough look at what is involved in pushing back on some of the detrimental norms of our culture, like how we build things to be disposable or replaced.

### Student Reflection

This was the first project I've done where it was really crucial for every group member to work together to create our final product, a bench for the Ray and Joan Kroc Center. Everyone in my group had different skills that were extremely important to constructing a bench that worked for our customer. It was really lovely to not only create a product that I was proud of, but to also feel that I'd been able to assist a local nonprofit organization. —Abigail Tull

*To learn more about this project and others, visit [http://dp.hightechhigh.org/~pholder/Digital\\_Portfolio/Project\\_Archive](http://dp.hightechhigh.org/~pholder/Digital_Portfolio/Project_Archive).*



## What is your Everest?

*Natalie Alli, Grace Maddox, and Christine Sullivan, 5th Grade  
High Tech Elementary Chula Vista*

After reading the novel *Peak*, by Roland Smith, fifth grade students studied the geography, culture and history of Mount Everest. Fieldwork for this project included visiting a Buddhist temple, hiking Cowles Mountain, and rock climbing at a local gym. Students interviewed an anthropologist about her travels to the Himalayas and Skyped with a climber who summited Everest in 2011. This project was carried out in three classrooms over the first trimester of the school year. While all three teachers worked together to plan the project launch, lesson sequence, and field work, each teacher was able to design her own final product and class exhibition. Christine's students crafted their own adventure short stories that were published together in a class anthology, Grace's students created prayer flags, and Natalie's students wrote and performed spoken word dedications to someone who had overcome their own Everest.

### Teacher Reflections

Typically, climbers leave colorful prayer flags at the summit of Mount Everest. Throughout this project, our students discovered that bravery comes in many forms, and the one does not have to climb a mountain to be considered brave. For one of their final products, they created prayer flags and dedications in honor of someone brave. They were motivated and inspired to create multiple drafts of their design and then cut, stitched, stenciled, and applied the most beautiful flags.

### Student Reflections

My personal Everest is to be an OB/GYN because I want to help save little babies  
—Christian Flower

My Everest has to do with being an animal advocate and volunteering at shelter when I grow up. I want to do this because I think all animals are cute even the ugly ones like naked mole rats.  
—Lauren Alatrisme

*To learn more about this project and others, visit <http://htecv.weebly.com/>*



## Project IDEATE

*Kimberly Cawkwell, 4th Grade  
High Tech Elementary North County*

Students explored the essential question, “How Can Innovative Ideas Make a Difference?” Based on Google’s concept of Genius Hour and the Stanford Design School, our classroom was transformed to a place where students could dream big. Students interviewed five different organizations in our community: 1) Pacific Preschool, 2) San Marcos City Hall, 3) Vallecitos Water District, 4) San Marcos Police Station, and 5) Escondido Humane Society. From these interviews, students discovered dilemmas that the organizations were having. They were tasked by the organization to create a product that could help provide a resolution. Using a delegated budget, students worked in groups to build a business plan around this innovation. They designed websites, mission statements, logos, business cards and more for their businesses. Throughout the project, students collaborated with their organization to receive critique and feedback on their products. Their final prototypes and products were showcased in a business pitch for audience members to purchase and possibly invest in.

### Teacher Reflection

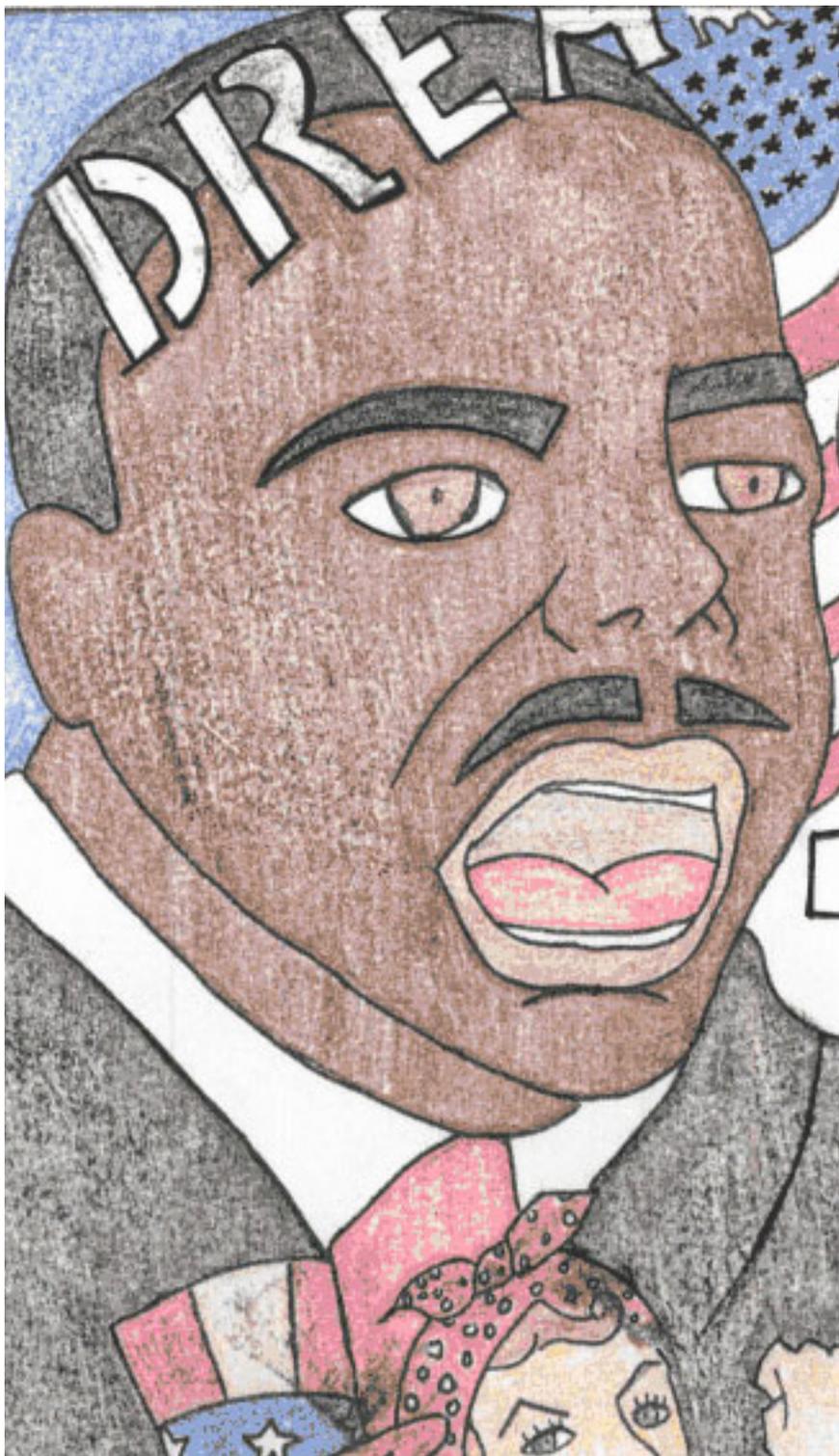
I was so impressed and inspired by how professional the students were when given the trust to engage in these short internships. They were great listeners and proposed thoughtful ideas that could help resolve their organization’s dilemma. For example, the group who visited the local preschool learned the preschoolers had trouble reading. So they created non-fiction interactive books for the preschoolers to read. The group who went to the San Marcos City Hall learned that there was a trash problem in the community parks. They invented a trash robot called “Trashbot” to clean up our city.

### Student Reflections

I learned that no matter how young you are, you can dream big.  
— Peyton

I learned to keep persevering with your ideas and don’t give up on yourself.  
— Sinqi

*To learn more about this project, please visit Ms.Kim’s digital portfolio: [mskimcawkwell.wix.com/htefourthgradeourthgrade](http://mskimcawkwell.wix.com/htefourthgradeourthgrade)*



## Choose Your Own Adventure Through U.S. History

*Tim Briggs, 11th Grade Humanities*

*High Tech High Chula Vista*

For this project, students researched, wrote, and self-published a collection of choose your own adventure stories based on U.S. History. To create their story, each student researched a historical time period and created a story map of possible choices for their character based on the significant events in their era. In writing their stories, students incorporated dialogue, sensory details, and narrative techniques to create gripping second person narratives. Each narrative was then edited by a student editorial team while other students created original art and designed a layout to format our book for publication. At our final exhibition, students presented their work to teachers, students, and community members at the Grossmont Literary Arts Festival.

### Teacher Reflection

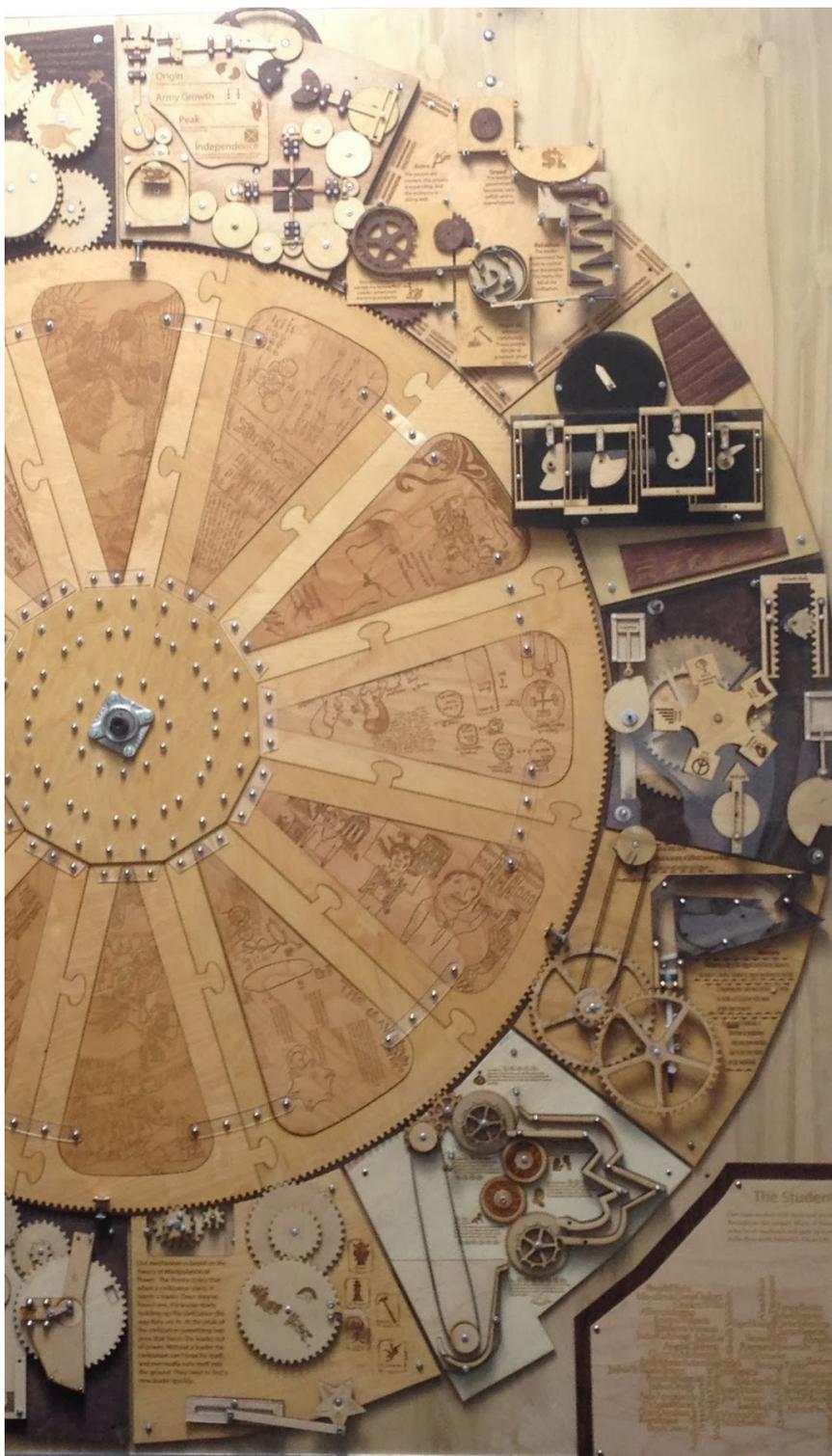
This project far exceeded my expectations for the depth and complexity of the students' narratives. What I had envisioned as a 200-300 page book sprawled to nearly 600 pages as the students dug deeper into their historical periods and created pathways for their character to explore different events. Students were invested in the creation and publication of our book. Every narrative was reviewed and edited by a team of students for content and historical accuracy and then formatted for publication by our design team. It inspired me to see students work hard to prepare our book and take pride in completing such a large task as a team.

### Student Reflection

Being a member of various groups helped me develop new skills. As a member of the editing group, I improved my understanding of grammar and writing by reviewing the work of other students. I also learned how to use Adobe Acrobat to publish our writing in a professional format. Being a part of the leadership and exhibition crew made me step out my comfort zone and practice my communication and leadership skills. Overall, the project helped me not only to become a more creative writer, but it also let me improve how I work with other students.

—Rafely Palacios

*To learn more about this project and others, visit <http://tim-briggsdp.weebly.com/>*



## Apocalypto

*Scott Swaaley, Physics & Engineering and Mike Strong, Humanities  
High Tech High*

Human history is punctuated by the prolific rise and inevitable collapse of civilization after civilization. In this project, students formulated hypotheses for these fluctuations, compared their hypotheses with historical evidence, mapped quantitative changes throughout history, then created a narrative and mechanical representation of their findings. The final product was exhibited on the eve of the Mayan Apocalypse.

**Teacher Reflection:** *See article on the next page*

### Student Reflections

Working on Apocalypto was the first glimpse into what I would later define as a “real” project: a project in which the students choose the scope, method, and design. If a student made a mistake on one of those three, it was up to him or her to fix it. In this project, failure wasn’t an option; it was simply a means of reaching success. —Sharon Tamir

Taking on the role of mechanist felt like a lot of weight on my shoulders. However, as I put in more and more work, I started to see progress towards an end goal, which made me even more tenacious. After months of hard work, seeing the final product on the wall at exhibition was one of the greatest feelings I’ve ever had. I had created a masterpiece and all of a sudden, the many late nights and fatigue-filled mornings felt worth it. —Josh Ortega

As one of the students who had to go through the humiliating experience of telling exhibition-goers that my piece belonged in one of the gaping holes of the exhibition’s centerpiece, I can now say that it was perhaps the most significant experience I’ve had in high school. My failure to have my mechanism ready on exhibition night along with the overall project made me so much more resilient and calm which would prove to be very important during my next three years of high school. —Maya Ervin

*To learn more about this project and others, visit <http://pbl.scottswaaley.com/apocalypto-project-summary/>*



*Photo courtesy of Scott Swaaley*

## Inside a Successful School Project: The Good, the Bad, and the Ugly

*Scott Swaaley  
Gary and Jeri-Ann Jacobs High Tech High*

In January I was invited to attend the Sundance Film Festival for the premiere of *Most Likely to Succeed*, a film that featured High Tech High and one of my class projects. My students, my colleague Mike Strong and I appeared larger than life on the big screen as we worked on our 2012 Physics and Humanities collaboration we called *Apocalypto*. While I enjoyed the movie and am extremely grateful for the overall experience, the Hollywood version couldn't capture it all—the struggle, the doubt, the failure, and the multitude of other realities we went through that year—each of which taught us many lessons for the future. So, here's a behind-the-scenes look at our project. What you're about to read are excerpts of blog posts and reflections that I wrote back in 2013 as my first year of teaching started to wind down.

### What We Pitched to Students

“Human history is punctuated by the prolific rise and inevitable collapse of civilization after civilization. In this project, you will formulate hypotheses for these fluctuations, compare their hypotheses

with historical evidence, map quantitative changes throughout history, then create a narrative and mechanical representation of your findings. You will then exhibit your work on the eve of the Mayan Apocalypse.”

It all started on a sunny summer day at Luna Grill. My new teaching partner Mike and I were finally sitting down to talk about projects and after brainstorming for a while we had narrowed our focus to one core concept—cycles. My partner, as a humanities teacher, was excited about exploring the cyclic nature of civilizations while I was excited to explore the cyclic nature of our physical world (harmonics, gears, waves, etc.). We even started to draw a picture on a napkin of what our exhibition would look like: concentric circles of tables, each addressing a different take on cycles. In the initial plan, each student would exhibit their own individual work.

Sometime later a teacher from one of HTH’s the middle schools emailed me asking for help with a project. He had seen my previous work with gear projects and wanted to pick my brain about the best ways to manufacture them. Around the same time, someone had emailed me an article about the Antikythera Mechanism and the mechanical Mayan Calendar. One day during our prep period, my partner and I started chatting about exhibition dates. He mentioned, jokingly, that we could have our exhibition on the night of the Mayan Apocalypse. I then started talking about these cool emails I’d been getting about ancient mechanisms and voila—we were going to make a Mayan calendar and exhibit it on the eve of the Mayan apocalypse.

### **Doing the Project First**

At this point, we had no idea if it was possible or how we would do it. With the venerable Jeff Robin (HTH art teacher and project-based learning pedagogue) on my shoulder I decided to “do the project first.” While I knew I wouldn’t be able to achieve the scale of the final project, I wanted to create something that could give us hope that it would be possible. We also wanted a hands-on example that we could show our students when describing the project. It just so happened that our school had recently received a significant donation and I had pushed hard for a laser cutter and then had helped to install and tinker with this new piece of equipment over summer break. We used it to create a small model of the Mayan Calendar.

### **Tuning**

At HTH, we use a protocol for “tuning” projects with our colleagues. I went through this process several times and it helped me to finalize both the project scope and the stages of scaffolding that I would need to implement. I underwent a total of three project-tuning protocols for this project (not including casual conversations and advice). The most significant feedback I received was related to scaffolding and accessibility for students. We were going to be working with fourteen year olds and the project required multiple levels of abstraction, lots of innovation, and the use of lots of new skills. (For those interested in the scheduling, assignments, and deliverables we created for students, see the website referenced at the end of this article.)

### **Reflections**

My teaching partner and I have spent a great deal of time talking about what went right and what went wrong with the Apocalypto Project. We’ve also spent a great deal of time talking with our students (casually and through a seminar) and they expressed significant frustrations, many of which are described below.

At our exhibition, Apocalypto was far from complete. Five of the fourteen mechanisms were in some state of incompleteness (not counting those that broke during exhibition) and many tears were shed that night. Does this mean that the project was too difficult? Or is failure just evidence of an authentic challenge? I don’t know that answer. What I do know is that after exhibition, after grades were in, and while we had moved onto other things, students were still working on completing their mechanisms. Two have since finished and mounted their mechanism. Six months past the finale, at his insistence, one student spent his first two days of summer working on his mechanism with me in the classroom.

### **The Trials and Tribulations of Group Work**

As is typical in a project, some of our biggest student complaints were centered around group selection. At the start of the project each student submitted an index card listing their perceived strengths/weaknesses, a few people they would prefer to work with, and a few people they

absolutely did not want to work with. From there, my teaching partner and I deliberately arranged groups that were a balance of student choice, common sense, and individual abilities. However, I place very little blame on the process of group selection. I believe that many of the frustrations students experienced (and expressed) about their partners were a result of how we divided up responsibilities within the group—not in the groups themselves.

### Division of Labor in Student Groups

In my mind, there are two very different schools of thought when it comes to organizing a project-based classroom. The first is specialization of labor where each student chooses (or is assigned) a unique task that in some way contributes to the greater project. This specialization can be organized at a group or whole-class level. My favorite example of this kind of specialization is a classroom organizing a play. Individual students may be building a set, writing a script, making a costume, or acting. Each student has a fundamentally different responsibility and thus a fundamentally different experience and learning outcome. Some teachers try to mitigate this outcome by having each student complete a more comprehensive (but much smaller) simulation of the project before the more authentic collaboration begins. Nevertheless, the final exhibited piece is a product of specialists.

The competing view is that students should experience a project in a substantially similar way. This may mean that each element of the project is collaborative (they all contribute to the script, the set, and the acting) or that they create things individually or even some hybrid of the two. All students emerge from the project having shared in responsibilities and having similar learning outcomes. One significant advantage of this method is that students begin their next experience (be it the next project or next grade) with a more equitable footing. It would be very easy, under the former model, for a student that is ‘good with their hands’ to end up in a specialization where they continue to hone what they’re good at but emerge lacking in some other skill (like writing).

This is part of a much larger conversation about student learning (and perhaps even about economic/political systems) and is something that I think about a lot when planning projects. I suspect that it’s also

closely tied to the type of project being developed. A project with a single shared product or outcome (i.e. Apocalypso or a class play) may require specialization of labor where more individualized projects may be more flexible.

As can be seen in the Apocalypso project description, we chose a hybrid of specialized labor. Our students did preliminary work as individuals but the final exhibited work was done within these assigned roles (in which all activities and assessment were based):

- Master Machinist (manages and modifies mechanism file, in charge of construction)
- Master Graphic Artist (poster, glyphs, image processing, converting physics manifesto)
- Master of Humanities (research paper abstracts)
- Master of Physics (performs calculations, makes the physics manifesto)
- Master Journalist (documents the process and markets the exhibition) [only present in groups of 5]

The work groups did in this final stage of the project dwarfed that which was done individually and the workload was not divided evenly between groups. The machinists shouldered the majority of the workload and were completely overwhelmed by both the technical difficulty of the project and the sheer workload. Many of the machinists stayed regularly until 6pm, came in on weekends, and even came in during Thanksgiving break to work. While other roles had the potential to be somewhat challenging (should a student be so motivated) they were much less dominant in our classroom culture. Our culture quickly became immersed and obsessed with the success of the mechanisms and this only added to the stress tolerated by our machinists. Many of the students not directly responsible for the mechanism became less engaged as the project went on and when we tried to spread the workload out more evenly we found that the technical skills our machinists had acquired thus far had set them apart from their peers. So much so that work on the mechanisms became, in all practical aspects, inaccessible to a significant portion of our students. This was a problematic learning environment and we were worried that it would create hostility within groups.

## More Than Tinkering

Each student group was responsible for designing and fabricating a mechanism but that is just a piece of the overall finished product. The infrastructure to support the mechanisms also needed to be designed and fabricated. The initial intent was to identify students needing additional challenge and to involve them with this design. However, as the enormity of the project set in, it quickly became inaccessible to those students. The precision and scale required for the infrastructure was significant and it turned out that I had to design and fabricate that infrastructure in my free time. As an engineer, carpenter, and lifelong tinkerer—this was an extreme challenge for me. I spent well over 100 hours outside of school designing, sourcing parts, and fabricating this several hundred pound behemoth. These were hours that were NOT spent bettering my instruction for the next day, following-up with struggling students, or resting. And while a part of me enjoys these obsessive spurts of innovation, it was not an ideal environment for great teaching. In the end I hope that the infrastructure I produced was merely the stage for student work and that I did not turn it into a ‘dad did my project’ type scenario.

## Document, Document, Document

Going into the project we knew that we were not good at documenting process. Our projects tend to be ever-changing and neither of us are the type to stop mid-day to document what happened or take a picture. Our intent with creating the ‘Journalist’ role in groups was to circumvent our shortcomings, but the best thing we did was to institute project binders. Students were required to keep all documentation in a formal binder and this helped tremendously in both student organization and our ability to look back at what we did. Now we just need to get better at our own documentation (I’m writing this 6 months after the completion of the project—long after I’ve forgotten the most meaningful insights).

## When Collaboration Works...

While my partner and I are ultimately responsible for our own content, a great deal of our innovation stemmed from working together. We are lucky to both have the ability to cross the curriculum divide. I am

a pretty good writer, editor, and I enjoy writing. He is a competent builder and has a good eye for aesthetics. Because of this overlap, we are interested in and able to help shape and innovate the other’s curriculum. For example, my work in deconstructing student theories helped students to iron out inconsistencies and improve their abstracts while Mike’s builder’s instinct led him to be the leader in laser engraving images at our school and to spur the innovation of the wedges found throughout the wheel. This project evolved a great deal from its initial conception and a significant portion of those evolutions took place through casual conversations between my teaching partner and me.

## No Right Answers

This project did not have a right answer. Each and every mechanism was one of a kind, as was each and every theory of civilization. My most common answers to student questions were things like: “seems reasonable, try it,” “I have no idea,” or “I’ve never done this before.” The beauty was that we didn’t know the answers – we were solving everything together. The fact that Mike and I were equally willing to experiment, fail, and try again created a culture of persistence and innovation that we are extremely proud of.

## Lessons Learned

After this experience we went into our next project with a few things in mind:

- Although individual responsibilities should be clear (to avoid the ‘group grade’ mentality) students need to be involved in the whole process. We cannot have one student responsible for engineering and another responsible for writing.
- For our own sanity (as well as the kids) we need to think a bit smaller and let the students that struggled on Apocalypso have some chances for more success. We also need to better anticipate any pieces of the project that may fall on the teachers’ shoulders (to make sure we don’t end up single!).
- We REALLY want to try to recreate the authentic collaboration between disciplines where they are completely reliant one upon another for project completion.
- We want to reach out to our community and pull in some adult world connections in the form of expert speakers.

Although we tested (and maybe even exceeded) student limits on this project, each and every student has fond memories of what we accomplished together. In the end, students bound together to create something that is receiving national recognition and they are extremely proud of what they accomplished. Even students that openly hated the project while it was underway reflect back on it as a significant period of personal growth. Parents have remarked that their children are significantly different people having gone through that project—more confident, more persistent, and less willing to back down when facing adversity.

*More information and media about the project, students, and teachers is available online at GRITLab's website: <http://pbl.scottswaaley.com/>*

*For a short video about "doing the project first" visit: <http://howtovideos.hightechhigh.org/video/268/What+Project+Based+Learning+Is>*

# Getting More Students to College: A Foray into Improvement Research

*Isaac Jones, Ryan Gallagher, Ben Daley & Stacey Caillier  
Gary and Jeri-Ann Jacobs High Tech High*

*"Education has a learning problem."  
~ Tony Bryk, Ph.D.*

**H**ow do we improve practice? How do we know if a particular approach is helping us achieve the outcomes we care about? And how do we scale our learning so that we can impact whole systems, not just individual classrooms? For decades, many of us working in schools or in educational research have been asking these questions. And yet, many would argue that the current educational research infrastructure is not doing enough to improve our nation's schools (Bryk, Gomez, & Grunow, 2011; Bryk, 2009; Donovan, 2013). Critics of current educational research argue that it is frequently disconnected from practice (Anderson & Shattuck, 2012; Penuel, Fishman, Cheng, & Sabelli, 2011; The Design-Based Research Collective, 2003) and does not scale across contexts (Bryk et al., 2011; Bryk, 2009). For educational research to be more relevant, some scholars argue that it should be conducted by teams of scholars and practitioners, and should focus on improving problems of practice (Bryk et al., 2011; Donovan,

2013; Gutiérrez & Penuel, 2014). In short, it should help us learn how to learn, so that we are working together to continually improve the education we offer to young people. Improvement research is one model that might enable such focus by orienting our collective work around three key questions (Langley et al., 2009): What is our goal? How will we know if we've met our goal? What innovations can we introduce into the system that might lead to meeting that goal?

As educators, it is important to understand the system in which we work, and our unique place in it. Donald Berwick, one of the founders of improvement research and past president and CEO of the Institute for Healthcare Improvement, famously noted, "Every system is perfectly designed to achieve exactly the results it gets." If there are deep inequities and a lack of engagement in our schools, this is not happenstance. It is by design. It is the result of myriad conscious and unconscious choices. To improve education, we need to better understand our system—the mechanisms and assumptions that drive it and that often go unquestioned—as well as the experiences of those working and living within it. Then we need to have the courage to act, to make different choices and to transform the system to get the results we care about most.

Scholars and practitioners have had success using improvement research principles to solve important problems of practice across different disciplines and complex (often dysfunctional) systems, including the auto industry, airline industry, and health care (Smith, Saunders, Stuckhardt, & McGinnis, 2013). There is a new and growing interest in bringing improvement research methodology to bear on long standing problems of practice in education, and in so doing, to rethink and reshape the educational system that produces poor outcomes for too many of our students (Bryk, 2009). Thus far, improvement research has been utilized to improve national community college student performance in developmental mathematics, which has served as a gatekeeper and an obstacle for many students attaining a college degree (Bryk et al., 2011). It has been used to improve the quality and consistency of feedback for new teachers in K-12 districts in Austin and Baltimore (Bryk, 2014; Park, 2014), with the broader hope of better supporting and retaining promising young educators in some of our most disadvantaged communities. And it has been implemented to further develop diverse K-12 students' academic mindsets so that

they feel school is a place where they belong and can be successful (Bryk et al., 2013). In this article, we briefly discuss some of the tools of improvement research and share insights from our initial attempts to improve the college application process for students at High Tech High North County.

### **Machines vs. Brains: The Tools of Improvement Research**

While improvement research is relatively new to education, it has a rich theoretical foundation. Morgan (2006) identified multiple metaphors that may be used to better understand organizations. The dominant view of organizations throughout the 20th century was as machines to be optimized. This view was articulated and developed by Frederick the Great of Prussia in the mid 1700s and Frederick Taylor in the early 1900s. This perspective has come to be known as scientific management and includes ideas such as: (a) managers are responsible for thinking while workers are responsible for doing; (b) find the most efficient and precise way to complete a task; (c) select and train workers on the task; and then (d) monitor workers to ensure compliance (Morgan, 2006). Scientific management has been critiqued as creating organizations that are rigid bureaucracies that develop employee apathy and encourage passivity (Morgan, 2006). As a result, other competing theories of organizations developed.

In opposition to viewing organizations as machines to be optimized, a competing metaphor is to view organizations as brains, which is to say flexible, resilient, and inventive learning organizations (Morgan, 2006). One contributor to the theory of learning organizations is the statistician and management consultant Edwards Deming, known for helping to transform Japanese industry in the 1950s through a series of ideas opposed to scientific management (Holt, 1993). In contrast to scientific management principles, where the manager's job is to monitor for compliance, Deming (1986) dismisses the feasibility and wisdom of such inspection. Instead, he argues that employees should be managed such that they can monitor and inspect their own work (Schmoker & Wilson, 1993). Rather than attempting to improve the final product through inspection at the end, Deming argued for building quality control into the process itself (Holt, 1993) and argued for a process of continuous improvement: "improve constantly and forever" (Deming, 1986, p. 23).

Improvement research draws upon several tools for facilitating this ongoing improvement by people in the system: the driver diagram, the Plan-Do-Study-Act cycle (PDSA), and practical measurement (Langley et al., 2009, p. 119).

### *Driver Diagrams: Developing a Working Theory*

Driver diagrams are designed to help improvement scientists (i.e. us) think clearly and systematically about their assumptions and theory of action as they attempt to develop changes that will lead to improvement. Driver diagrams are made up of four elements: aims, drivers, change ideas, and measures.

- The **aim** pinpoints and describes what is attempting to be improved upon, and is framed as a target or goal. This goal should be specifically defined, for as Bryk et al. (2011) observe, “some is not a number and soon is not a time” (p. 136).
- **Drivers** are the presumed causes for why the aim is not already being met.
- **Change ideas** are proposed interventions that will lead to the aim (Bryk et al., 2011). Any particular change idea might impact multiple drivers.
- The **measures** outline possible process and outcome measures that let improvement scientists know whether the changes they have tried have led to the intended improvement.

Practitioners often have hunches about what is contributing to the problem and about the efficacy of particular interventions. The driver diagram pushes practitioners to steer away from silver bullet solutions, to stay focused on a systems approach and to design interventions that support their ultimate goal (Bryk et al., 2011).

### *PDSA Cycles: Learning fast to implement well*

The PDSA cycle is a tool for systematically testing iterations towards improvement. In the PDSA cycle, teams (a) create a plan, which includes making specific predictions about what will happen as a result of a change; (b) implement the change in a small scale manner; (c) study the results of the change, including whether the predictions came true or not; and (d) act to refine the change or develop a new

one altogether. PDSAs encourage rapid testing and the development of protocols and practices that can be implemented and adapted across diverse contexts.

### *Practical Measurement: Integrating data and daily practice*

Yeager et al. (2014) describe two traditional purposes for educational measurement—accountability and theory development. They argue that for practitioners on the ground, a different type of measurement is needed, which they define as “practical measurement.” Practitioners engaged in improvement science require measures that directly measure the target and are designed to work within the constraints of day-to-day educational practice. For example, a survey might need to be answerable in only three minutes and as such must have carefully selected questions that eliminate redundancy and give improvement researchers precise information about their targeted goal (Yeager et al., 2014).

It is worth noting that improvement research challenges existing epistemologies of “What counts as research?” In this way, improvement research is aligned with translational research and action research (Dolle, et al., 2012), both of which are common approaches to educational research. In translational research, information flows down from scholars to practitioners, as theories are developed by scholars and then implemented by practitioners. In action research, in contrast, information flows up. Individual teachers or groups of teachers study local problems of practice in systematic ways. This knowledge may become aggregated to form more general theories. However, because action research is so grounded in a particular context, it has been criticized for failing to work across contexts and thus build scalable knowledge (Dolle, et al., 2012). Dolle et al. argue that improvement research is well situated as a new form of educational research to address the shortcomings of translational research and action research by focusing on improving problems of practice at scale.

### **Putting it to Practice: Improving the College Application Process**

High Tech High (HTH) is a group of twelve public charter schools in San Diego County serving approximately 4,900 K-12 students and employing 310 teachers. Since its inception, HTH has aimed to be

a school organization that is diverse and integrated, particularly by race, class, gender, and for students with special needs. Orfield (2009) describes how our nation's K-12 schools have actually become less diverse since *Brown v. Board of Education*. He laments, "For decades the basic message has been that we do not need to do anything about [problems related to resegregation] and should eliminate the legal and policy tools that we possessed" (p. 32). In contrast, HTH aims to create an intentionally integrated school community with the broader goal of helping to build an integrated society. Since California Proposition 209 forbids schools from using race in their admissions process, HTH uses zip codes as a proxy for race. Due to the unfortunate reality of housing segregation, this ensures that the student population mirrors the diverse communities we serve (Kluver & Rosenstock, 2003).

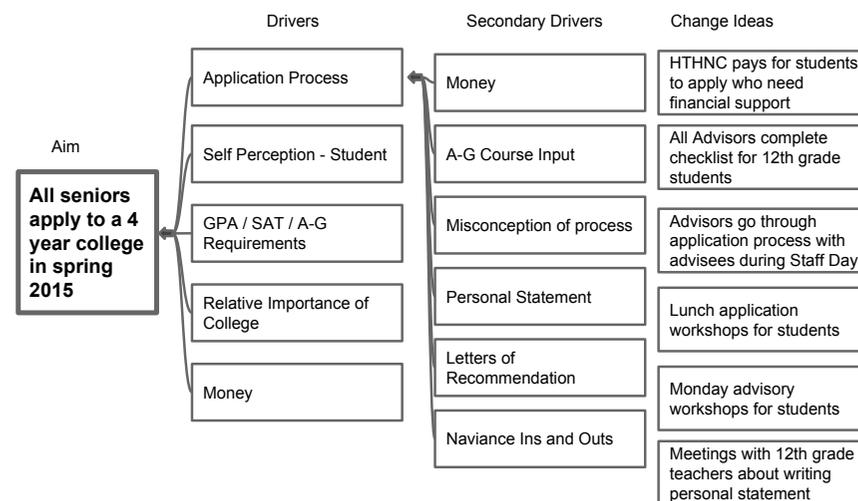
HTH has long held a strong interest in helping all students have the opportunity to attend college and succeed there. While 98% of HTH graduates go on to college and 75% go directly to four year colleges, a lower percentage of African American and Latino boys go directly to 4 year colleges (estimated to be between 55% - 65%). For this reason, in June of 2014 a team of educators from HTH and the High Tech High Graduate School of Education (HTH GSE) developed an aim to improve the percentage of African American and Latino boys going directly to four year colleges. (A link to the driver diagram guiding this work can be found at the end of this article.) As the quote at the bottom of our driver diagram suggests, our working theory is "definitely incomplete and possibly incorrect."

Since that time, a number of change ideas have been tested in an effort to achieve this aim. Educators at High Tech Elementary Chula Vista and High Tech High Chula Vista have been working on improving the equity of participation during collaborative group work. Teachers at High Tech Middle have focused on building and sustaining growth mindsets (Dweck, 2007) with 7th graders through goal-setting and explicit teaching about fixed vs. growth mindsets. High Tech High Media Arts worked on a project in the fall to have all 9th grade students pass all of their classes first semester. While the number of students who passed all their courses did not improve, the team learned about the importance of explicitly teaching ninth graders organizational skills. They also recognized that there was more to be done in cultivating African American and Latino male students' sense of belonging in school, and ultimately in college.

To have more students going to college and succeeding there, we need to first graduate more students from high schools who are college and career ready, meaning that they are aware, eligible, and prepared. However, growing research is showing that this alone is not enough; students need to be determined to go—meaning that they see themselves as people who belong in college and who possess the academic mindset to enroll, persevere and ultimately succeed (Farrington et. al., 2012). They also need to actually apply.

To that end, High Tech High North County worked on a project to increase the percentage of seniors applying to four year colleges. Knowing that the percentage of students who start at a community college and graduate from a four-year college is statistically quite low, Isaac, the school director and co-author of this article, decided to focus on the college application process.

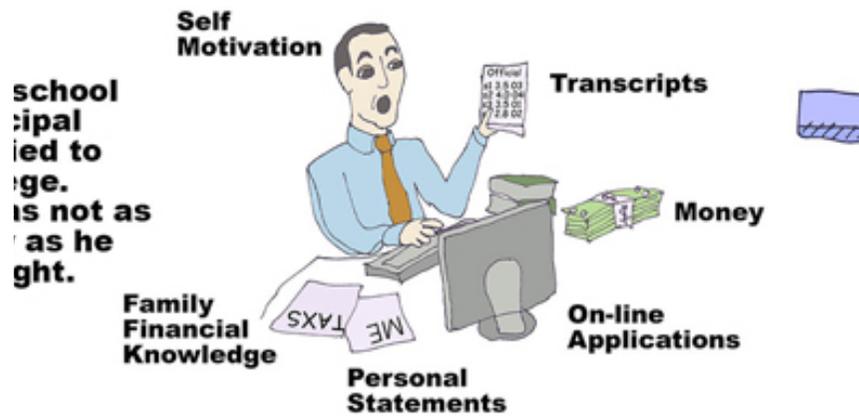
HTHNC College Application Process



He began by applying to two local universities himself and discovered that the process was more confusing than he expected. He then talked to colleagues at other high schools to find out what processes they had in place to help students with the application process. He and colleagues at his school discussed the most promising strategies and put them into place. For example, on a staff day, seniors came in and

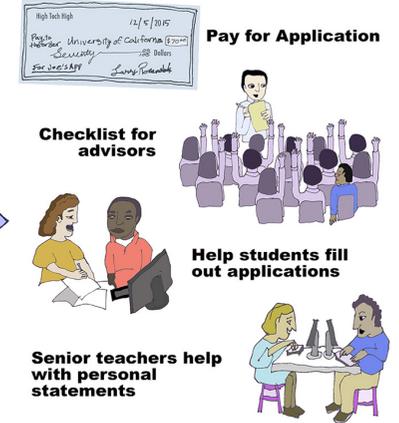
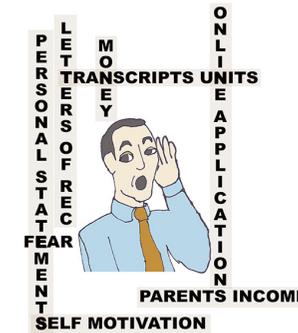
# percentage of students applying to 4-year colleges

High Tech High North County focused on the college application process.

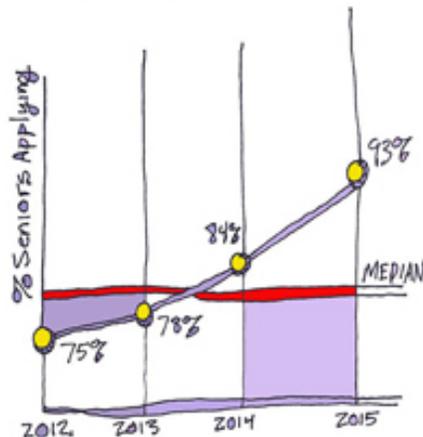


The principal realized that applying to college was no easy task, even for someone who is used to filling out forms and documents. Imagine how the students feel, **OVERWHELMED!**

What could we do to make applying to college more accessible?



## Results



We surveyed all the 12th grade students, what would be the biggest help? **Help writing the Personal Statement**

Junior year all students will complete a personal narrative statement for humanities class.

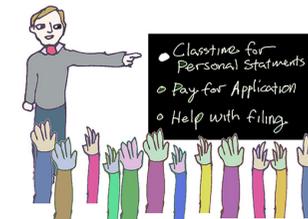


Illustration by Jeff Robin

worked on their college applications alongside their advisor. Teachers also embedded application support into advisory and hosted lunch workshops. As a result, more students applied to four-year colleges than ever before, with an increase from 84% in 2014 to 93% in 2015. After the application process was completed, the school surveyed seniors to find out what was most challenging about the process. Students reported that they were most overwhelmed by the personal statement required by many colleges. To address this issue, all juniors are completing personal statements as part of their humanities class and will have a working draft for next year. (*See an illustration of the process on the previous page*)

One next step is to continue to refine the college application process at HTHNC. Another is to track whether more students applying to four-year colleges actually translates to more students attending as well as succeeding at four-year schools. Another is to disaggregate data from this project to track African American and Latino boys more closely. Another is to share lessons learned across other High Tech Highs as well as other schools around the country. By more closely tracking outcome and process measures of the college application process across our organization, we may be able to help more students, especially underserved populations, attend and succeed in college.

### **An Invitation: Scaling the Work**

A key aspect of improvement research is the desire to create knowledge that will work across many contexts; in other words, to move beyond idiosyncratic knowledge and take innovations to scale (Silva & White, 2013). This is tricky. Educational innovations often work on a small scale, but lose effectiveness when scaled up (Bryk et al., 2011). What works in one setting may not work in another.

However, by engaging in improvement research with others who are focused on the same aim—in a network improvement community—we are able to understand what leads to variability in performance across contexts. The focus is not simply on whether an innovation works, but on identifying the conditions that enable an innovation to work. By bringing together a diverse group of schools, districts, and organizations to work on a persistent problem of practice, we are able to develop change ideas that work in a variety of settings, better enabling us to scale the work.

One promising practice we have already adapted to share our learning across a network is the “improvement review” (Reinertsen, Pugh, & Nolan, 2003). In an improvement review, a team shares their aim statement, driver diagram, measures, and poses a question to the larger group. The group then uses a structured protocol to ask the team questions, and to discuss their work and potential next steps. The review encourages presenting teams to get organized, complete partially finished work, and move forward with clarity. For other participants, the review facilitates a deeper understanding of, and commitment to, our shared work and the improvement process. We have found that protocols like this support the creation of professional communities of practice focused on teaching and learning, collaboration, and dialogue (Riordan, Caillier & Daly, 2014). These protocols also are critical to fostering a culture of improvement across a network where people embrace the work as part of their professional identity and their organization’s core mission (Russell et. al., submitted).

A basic tenet of improvement research is that we are stronger together than we are alone—and that by working together in systematic ways we can make significant progress on persistent problems of practice. In the past, and in many schools today, educators work in isolation. We hope to change that. If you care about getting all students to college and engaging them in work that matters along the way, consider this an invitation.

*To see the driver diagrams guiding the authors’ work visit: [https://docs.google.com/presentation/d/1VX8InpLH7NXxbZQ9shXCedYZDhubi7zONKx9pcLHB5U/edit#slide=id.g75f14928c\\_0\\_0](https://docs.google.com/presentation/d/1VX8InpLH7NXxbZQ9shXCedYZDhubi7zONKx9pcLHB5U/edit#slide=id.g75f14928c_0_0)*

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# After a Progressive K-12 Education...Then What? First Gen Youth Voices on the Transition to College

*Jean Kluver and Heather Lattimer  
Explorer Elementary Charter School  
and University of San Diego*

**A**nalisa, a second year student at a four-year university, sits across from me, eyes sparkling as she animatedly describes the projects she worked on when she was a student at High Tech High's Chula Vista campus. She is particularly proud of her class's work with the St. Jude's radio-thon-fundraiser where her enthusiasm, natural leadership abilities, and bilingual fluency helped her make significant contributions to the larger San Diego community. She reflects, "In high school, I was so passionate and driven about anything that we were talking about in the classroom and anything that had to do with how it connected to the outside world that I just naturally took on this position of being a leader."

Analisa credits the project-based approach and the close relationships fostered in the her high school community with helping her to find her voice and her strength. She recalls being shy and quiet in her traditional elementary and middle school, and explains, "I think that HTH has such a different way of teaching their students that really allows for them to kind of discover themselves and I believe that's how education should be. This kind of like self discovery along the way. As

you are learning, you are learning about yourself as well as the world around you.”

When asked about current projects and activities, however, Analisa’s face clouds. A first generation college student, she had arrived at university with great expectations, self-confidence and enthusiasm to take on the world. But two years in, reality has not met with her expectations. She often finds herself disconnected, with classes that can feel irrelevant, faculty and advisors who are distant, and peers who don’t understand the pressures that she faces as a commuter student living at home and struggling to balance academic classes with family and work obligations.

Reflecting on the person she was in high school and how she has changed since coming to college Analisa states, “since coming to college I haven’t seen that Analisa, the leadership Analisa, because I’m not involved in any extra-curriculars and there’s not a lot of group work in my courses or times where I can go into the community and show them like hey this is what I’m learning. So I definitely feel like you know, sometimes, where has that Analisa gone? Is she still there? Where can I find her? Because I do miss her. I miss feeling like I could be a capable leader.”

Unfortunately, Analisa’s story isn’t unique. Over the past several months as part of a larger research project looking at the transition between high school and college for first generation students, we’ve interviewed numerous graduates of High Tech High and other progressive schools who are currently enrolled in two- or four-year colleges and universities in the greater San Diego region. Like Analisa, all of these first-generation students began their higher education experience with great expectations; all were recognized by their high school teachers and counselors as having great promise; and all had participated in one-to-one and group mentoring sessions designed to prepare them for the transition to college. Yet, despite all of the strengths they brought with them as they transitioned into higher education, most have hit significant roadblocks that have caused them to question themselves, their academic abilities, and their future potential.

Another HTH graduate, also in her second year of college, shared the questions and doubts she had experienced in her transition to university—“My first semester I failed my algebra class and it was

just horrible. And then all those questions would come up about is she going to stay? Or even to myself I was like, well do I want to stay? Is this for me? You see all your other friends dropping out after the first semester, even more after the second semester, the first year. And it just becomes a thing of do I belong here? Or am I just another, am I first generation for a reason? Do I just belong working for the family? Should I just be finding myself another job? Maybe education isn’t my thing.”

As progressive K-12 educators, where do these quotes leave us? We resist the drive toward a test-prep curriculum in our schools, because it doesn’t build the skills and dispositions we believe are most important in life: engagement, curiosity, creativity, critical thinking, communication, problem solving. The one metric we want to be judged on is whether our students apply, gain acceptance, and succeed in college. Despite all the doomsaying in the popular media about the end of college as we know it, most of us still believe that a four year college or university education is the gateway to the middle class. It sets up more lifetime opportunities for our students than they might gain through any other path. We feel this especially strongly for our first generation students, young people whose parents have not completed college.

Although each first generation college student’s journey is distinct, there are some commonalities across the student accounts that deserve attention and raise questions for educators concerned about supporting student success and committed to equity for first generation students.

### Continued Dominance of Traditional Pedagogy

“Americans have long been told that our colleges and universities are the best in the world. It turns out that when it comes to college student learning, we are decidedly mediocre.”

—Kevin Carey, *The end of college: Creating the future of learning and the university of everywhere*, p.10

HTH graduates stress the importance of the real world learning and the personalization they experienced in high school. Yet the stark differences in pedagogy that they encounter in college raise questions for them. After the hands-on, personalized learning experiences that they encountered through the project-based approach to learning in

high school, the traditional lectures and exams that continue to dominate in many of their college courses can come as a shock. For some, the traditional approach of college coursework can lead to achievement challenges, especially as this approach requires study skills, such as note-taking during lectures, textbook reading, and memorization, that may not have been prioritized in their high school classes. For others, the traditional approach can raise questions about the premise of the work and the value of the courses—if theory is not connected to practice, what is the point of the work?

In the words of first generation students...

*In college I feel like I'm sitting in a class and I'm learning about stuff that I don't feel like I'm ever going to need.*

*I feel like in college there's a lot of lecture, lecture, lecture and you don't really get anything out of it.*

*College professors go so fast with things that I can't really retain the information as well as I guess some other students are used to because they went to high schools where they were used to having lectures every day.*

*So many of my classes were so boring. I felt like each class that I took contributed to me just saying you know I'm not going to go to school today, I'm just going to skip all my classes, and you know you kind of have to go to class to do well on your exams and I wasn't going to class so I didn't do well on my exams. I ended up getting three Cs and an F that semester.*

*For my first semester I kept on falling asleep in class. It isn't that I wasn't there to learn. It's just that I was so bored that I kept on falling asleep.*

#### Disconnect from a Campus Community

“We know one thing for certain: Students who are actively engaged in educationally purposeful activities and experiences, both inside and outside the classroom, are more likely than their disengaged peers to persist through to graduation.”

—Shaun R. Harper & Stephen John Quaye, *Student engagement in higher education: Theoretical perspectives*

*and practical approaches for diverse populations*, p. 4.

Pedagogy is political and it is personal too. Many students' responses to a lecture format and de-contextualized learning in college is not only to feel bored, as one might expect, but to feel personally devalued as well. Research on academic mindsets (Farrington, 2013) posits that “a sense of belonging” is a critical factor in students' ability to persevere through academic difficulty.

In addition to impersonal pedagogy, limited advising resources and the fact that for both cultural and financial reasons, many of the first generation students we interviewed are not living on campus with peers, campus environments often feel distant and disconnected. Although one of the potential benefits of going to college, particularly a residential college, can be the “cultural capital” (Bourdieu, 1977) that may be gained from the informal connections outside of class, most of our interviews revealed significant isolation for the first generation students who commute to and from campus only to sit in class among peers who are virtual strangers.

In the words of first generation students...

*Going back to HTH, like I said, the teachers really invested their time in you and really cared about you. So college was a hard transition. In my math class specifically, the professor made it clear that she did not care whether I failed or I passed...*

*In so many of my classes I feel like I'm just a number.*

*It's really hard. It's really hard. Particularly because everyone lives together and as soon as they get here they have a friend. They have a roommate and for me because I am a commuter it was more like I'm just here to go to class. I'm just here to go study in the library. I'm not here to go to the dining hall for dinner and hang out with all of my friends. I feel like I'm having a way different college experience than the people that live here.*

*I just haven't had anyone or met anyone on campus who I feel some kind of guidance from. I feel like I am on my own.*

*I definitely thought college was going to be a lot different than it is.... It hurts that I don't have that many friends here and it is really unfortunate but at the same time I know why I am here. So, I don't know. It's a lot different than what I thought it would be and it's not a bad thing it's just I know I'm not having the same experience as everyone else is and that sucks.*

## Financial Pressures

“In the ten years after 1997, the inflation-adjusted cost of a year of college at the average public university rose by 30 percent, while the earning power of a bachelor's degree remained roughly the same.”

—Clayton Christensen and Henry Eyring, *The innovative university: Changing the DNA of higher education from the inside out*, p. 13

For many of the first generation students we spoke with, decisions about where to go to college, whether or not to live on campus, and even what to major in are driven by financial pressures. Affording the ever-increasing cost of a four-year degree drove some students to opt for two-year community college as a way to get general education requirements “out of the way” prior to (hopefully) transferring to a four-year degree program. Concern about avoiding student debt caused others to take on more units per semester so that they could graduate early. Students who were interviewed also chose to live at home and work multiple part-time jobs to reduce costs and help supplement grants, loans, and parent contributions for tuition. Several students were majoring in areas such as business or accounting, which they perceived as more likely to ensure a job post-college.

These financial pressures exacerbated other academic concerns and further segregated these first generation students from their more economically advantaged peers. Working multiple jobs and living at home cut students off from the campus community. Taking an overload of course units and electing a major that might seem economically advantageous but didn't drive students' passions resulted in lower grades that risk limiting future academic as well as career opportunities. And the constant stress associated with

financial pressures caused some to question the value of their university experience.

In the words of first generation students...

*Not all the decisions that I've made at college have been financial ones but I can't say that the money issues haven't held me back.*

*I was on scholarship but even paying for half of the tuition was really rough. I had to work two jobs and I would work you know 30 hours a week and go to school full time at the same time. I had no free time at all. That was really rough.*

*It's like, you're going to this school because it has a good name but you are doing the same thing that you would at a community college, which is just commute, go home, not really talk to anyone. It makes me wonder if it is worth the cost.*

## Bringing K-12 Innovation to Higher Education

“A moral imperative exists in higher education. Yes, higher education needs to be more competitive and more cost conscious. But, ultimately, a more innovative postsecondary industry will increase access to higher education, create a better educated workforce, and enable more individuals to participate fully in the democratic public sphere.”

—Dominic J. Brewer and William G. Tierney, “Barriers to innovation in U.S. higher education” in *Reinventing higher education: The promise of innovation*, p. 14.

Although Analisa can cite example after example of childhood friends and former classmates who have dropped out of school, she remains confident that she will graduate despite the challenges she is encountering in college. Data from the National Student Data Clearinghouse shows that across demographic groups, High Tech High alumni graduate from college at a rate significantly above the national and statewide average. Analisa expresses thanks to former high school teachers and counselors who gave her the confidence to go meet with professors, who advised her on what classes to take in her freshman year, and who continue to provide moral support via email and texts when she is struggling.

Most of the first generation students that we interviewed expressed similar determination to stick it out and graduate from college. But as we heard story after story, we increasingly worried about the difficulty of the transition. What was making it so hard? Was the problem that students weren't adequately equipped to survive in a traditional college world? Were they not receiving enough support in the transition to college? And if the transition was this hard for students from HTH—students who had graduated from high school with grit and determination, self-awareness and self-advocacy skills—what about the other students, who were coming from more traditional schools where development of these non-cognitive skills is typically less of a priority?

One student, when asked what he would change about his education expressed that although he had loved his high school experience in a progressive, project-based environment, he sometimes wished that he had had a more traditional secondary experience so that he would be better prepared to “endure college classes.” Although we understood the thinking behind this observation, the use of that word “endure” was both telling and troubling.

As K-12 educators a significant part of our job is to prepare students for success in higher education. But as progressive educators, it is worth questioning the type of higher education for which we are preparing students. Is the challenge that we need to prepare students to conform to the expectations of traditional higher education? Or do we need to work with higher education to rethink how to make learning relevant and accessible for an increasingly diverse student body? In the midst of increasing calls for more affordable college cost structures, concerns about student loans, and questions about the readiness of college graduates to meet the employment demands of the workforce, we need to actively engage in a re-consideration of the structure and purpose of teaching and learning in higher education to ensure that it is meeting the needs of our graduates. The work that HTH and other progressive K-12 schools are doing can serve as a catalyst for re-imagining how teaching and learning happens at all levels of education.

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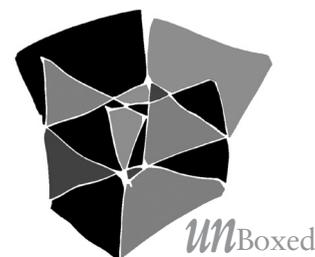
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