Education Imagination Retreat
March 12-13, 2016
Union League, Philadelphia

Day One Participants

Angela Duckworth Cofounder, Character Lab; Professor of Psychology, Penn
Marie Forgeard Lead Scientific Consultant, Imagination Institute, Penn
Scott Barry Kaufman Scientific Director, Imagination Institute, Penn
Stephen Hamilton Dean of the Graduate School of Education, High Tech High
Elizabeth Hyde Research Specialist, Imagination Institute, Penn
Jessica Lahey Journalist/Author/Teacher
Dominic Randolph Head of School, Riverdale Country School, NYC
Neil Stevenson Executive Portfolio Director, IDEO
Martin Seligman Director, Positive Psychology Center, Penn
Diane Tavenner Founder & CEO, Summit Public Schools

Day Two Participants
Day One Participants, plus:

Kanya Balakrishna Cofounder & President, The Future Project, NYC
Mark Gutkowski Director of Mastery, Avenues: The World School, NYC
Donald Kamentz Executive Director, Character Lab
Andrew Mangino Cofounder & CEO, The Future Project, NYC
Rebecca Nyquist Research Coordinator, Duckworth Lab, Positive Psychology Center, Penn
Boyd White Assistant Director, Summer Academic Programs, Center for Talented Youth

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What is the role of imagination in education, and further, how can education foster imagination and creativity? Finally, given educators' penchant for measurement, how might imagination and creativity be assessed in students *and* in teachers? These were the questions discussed by a group of educators, psychologists, designers, and entrepreneurs that convened recently in Philadelphia; a group Scott Barry Kaufman, retreat leader and Scientific Director of the Imagination Institute, called, "the starting lineup of the LA Lakers here in the education world." Goals of the weekend included discussing and advancing our knowledge of what role imagination plays in learning, how schools can plant and nurture imagination in children, and what the perfect vision of an imaginative education might look like, both in theory and reality.

First things first: what is the purpose of education?

Most of the conference attendees became educators or developed an interest in teaching because they experienced difficulties or dissatisfaction with their own education. Nearly all professed a love of learning, but not necessarily a love of the system in which they were educated, and have therefore felt driven to do better for future generations of students.

The obvious first philosophical question, then, the one that would underpin all consequent discussions about the nuts-and-bolts execution of education was, "what is the purpose of education?"

Opinions differed, to say the least. Proposed purposes of education included:

- Cultivation of mastery and empowerment

- Developing agency

- Identifying and developing creative giftedness

- Amassing cultural literacy

- Fostering an understanding of civic duty

- Enabling wonder

- Training compliance

These definitions tease out the chasm that exists between the much-hyped romance of intrinsically-motivated, wonder-filled creative endeavors, and the reality that much of education as it is practiced today is concerned with the indoctrination of skills and repetitive, deliberate practice that kids tend to resist because (in their own words) "it's boring." Great teachers manage to do both, but in order to do so, must meld a practical approach to skill development with a more inspiring romantic view of creativity and motivation.

Attendees made much of their personal moments of breakthrough and wonder in their own educations, and wished that more students could tap in to those self-driven, revelatory and magical moments in learning. The attendees who spend time in actual elementary and secondary classrooms, however, were more likely to understand the daily work of learning, work that is often a lot of drudgery mixed with rare moments of inspiration. Many students, in fact, are so used to the drudgery, that when moments of wonder and exploration are offered up, they don't know how to take advantage. Neil Stevenson, Executive Portfolio Director at IDEO, referred to this conundrum as the "free-range chicken" phenomenon. If chickens are offered free-range access to the world early

enough, he explained, they are unafraid to barrel out into the great, wild world in search of stimulation and sustenance, but if chickens are deprived of freedom for too long, they simply reject it and avoid exploration when it's offered.

If education is meant to stimulate imagination, creativity, and intellectual exploration, then the American system (and the British, it was pointed out) fails miserably, mainly due to a hyper-specialized focus on testable outcomes, an inordinate focus on the three Rs (*r*eading, w*r*iting, and a*r*ithmetic), and a reliance on measures of standardized achievement as a way to define and judge good teaching and learning. As Diane Tavenner, Founder & CEO of Summit Public Schools, explained, all of this comes with a great cost to learning:

> We are degree-oriented and focused, and we have decided that each and every degree or pathway has its own unique skill set that you must acquire that takes years and years and years. And so you're invested because if you get off that path you feel like you have to start all the way back at zero. The irony, of course, is all of those different pathways have lots of things in common among them. [You acquire] a huge foundation, a set of skills that you can transfer to other things.

The current specialized approach to education not only creates a reluctance to diverge from a particular educational path, it keeps kids removed from the promise of intellectual freedom far too late into childhood, thus lowering the chances they will ever be able to take advantage of it.

What are the active ingredients of effective learning?

What makes for success in education? The group discussed many possible candidates:

- Talent
- Intelligence
- Grit
- Commitment
- Passion
- Personal investment
- Efficiency
- Inspiration
- Engagement
- Imagination
- Creativity
- Comfort with frustration
- Curiosity
- Acceptance of discomfort
- Opportunity

One of the participants was Angela Duckworth, cofounder of the Character Lab, and a professor of psychology at Penn. As her book *Grit* was fast approaching its publication date at the time of the meeting, the concept of grit got a lot attention at the table. Nevertheless, everyone was interested in identifying the *numerous* factors at play in learning, particularly those beyond the usual suspects of IQ and talent.

Measuring imagination and its impact on learning

"So, could you, if you were told in your class, we're going to measure [imagination], here's how we're going to measure it, go to it? Could you make your kids more imaginative?" – Martin Seligman, Director, Positive Psychology Center at Penn

The moment attendees began talking about how to measure these factors in learning, or how to find a way to quantify imagination and creativity, hands went up in the air in frustration. Their frustration was due, in large part, to the existing culture of

high-stakes testing and the intense pressure on teachers to raise such test scores.

Discussion turned to the concept of a comprehensive indicator, something less like a test score and more like a collection of measures that can reveal, and do justice to, a whole picture of learning and well-being. Angela described a similar vision for assessing grit, created in partnership with Dominic Randolph, Head of School at Riverdale Country School, and others, as,

> […] a dashboard for character for kids. Things like, self-control and grit, but also things like curiosity and zest and gratitude, purpose, emotional intelligence. […] if it was fractionated into components, like coming to class with all the things that you need, not procrastinating on assignments, when somebody interrupts you, regulating your anger, not pushing other kids, not pushing back.

Once there's a way to gauge these traits like grit, whether we call them character strengths or non-cognitive skills, how do we help students grow and mature these capacities deemed important in learning? Dominic, and later, Angela, cited a conversation with Paul DePodesta, the statistician made famous for his contributions to the evolution of player recruiting in baseball by way of Michael Lewis' book *Moneyball*. As recounted by Angela,

> I was talking to Paul DePodesta, the *Moneyball* guy, and he wanted to know about grit, and he wanted to know about self-control. After I gave a mini-lecture on the phone I said, "Well, you've been studying players, on the field, off the field, your whole life, what's your theory?" And he said, "I think baseball players need three things, and they are the same three things they need in life, which is, one is grit, two is self-control." And I was like, ok check, check, I'm studying those things. And he said, "The third thing is self-awareness."

> Self-awareness, Dominic argued, is what allows people to take critical

feedback and internalize it in order to create change. The positive and constructive incorporation of feedback is what separates those who are high in grit

but low in self-awareness – who try and try again, to no avail because they have not looked honestly at their own methods and adapted them to suit the situation, from those who are able to make good use of their grit by hearing feedback, assessing it as honestly and as objectively as possible for its utility and truth, and incorporating that feedback in order to manifest change in behavior and hopefully, outcome.

The ability to self-assess honestly and compare your own self-assessment to others' assessments of you seems to be an indicator of success. The gap between these two measures also seems to be important to future success and growth. The people who are able to act on feedback and effect change, or "improvers," tend to be motivated by a desire for change in their situation, whether that's poverty or a bad family situation, according to Angela. However, it remains to be seen how the capacity for self-assessment leads to greater imagination and creativity. This might be a promising line of research.

Prioritizing imagination in schools and the danger of implementing imagination curricula

Codifying imagination and creativity, or crafting curricula for the development of these skills, may well be its death knell. This theme – supporting skills without creating formalized standards for their measure and development – arose over and over again. Much like Angela has seen the evolution of grit, first as an interesting trait that may predict future success, and eventually (to her hesitation) as the focus of specific curricula, policy, and assessment ploys, the group was reluctant to turn imagination and creativity

into a trait that needs to be nailed down like a bug secured for dissection on an entomologist's tray.

Imagination and creativity, however, play a much larger role in the human experience than simply educational success. According to Martin Seligman's PERMA model, well-being consists of (p)ositive emotions, (e)ngagement, (r)elationships, (m)eaning, and (a)chievement. Scott noted that a PERMA "C" for creativity might be useful, because creativity is not quite the same as engagement ("E") or achievement ("A"). Or, as explained by Martin himself,

> I use the acronym PERMA for what free people who are not suffering choose. Where P is positive emotion, happiness, subjective well being. E is engagement, being completely one with the music, time stopping for you. R is for good relationships. M is meaning and purpose. And A is what Angela works on achievement, accomplishment, mastery.

In schools that have taught PERMA, academic scores go up. However, placing value on teaching skills such as happiness, well-being, and, by extension, creativity and imagination, can introduce pitfalls in education if done maladroitly. Given the inherent challenges posed by fostering and measuring such multifaceted traits, educators need to develop relevant, thoughtful, and nuanced assessment strategies to capture them, or the endeavor could backfire.

Teachers can't be expected to evaluate or increase imagination and creativity in students until we fully understand how these concepts work in learning and how to best assess them. Everyone in attendance agreed that there's danger in popularizing and isolating imagination and creativity as an element of education. Like other concepts that are co-opted by popular culture (e.g., "growth mindset), they can become fads or silver

bullets, destined to fade out of public favor when the next hot topic or catchphrase comes around.

During a discussion about strengthening imagination and creativity in schools, Dominic wondered if it would be possible to hire teachers with this priority in mind. Would it be possible to shift away from a reliance on our current criteria for teacher excellence that include students' test scores and achievement toward one that explicitly favors creativity?

> I don't think that many schools that I walk into, including my own, are prioritizing that norm. So when people come in the door and I'm recruiting someone, I'm not thinking, is this person particularly creative or imaginative? I'm thinking, do they have the right credentials; have they shown some experience in teaching somewhere? I think that somehow, it's a big shift if you were to change schools and be saying, the norm in this school is going to be around creativity and imagination and that is what we are going to hire for.

The idea is that if schools articulate imagination as a priority early and often, even as early as the hiring process, it will be far more likely that teachers will value imagination and creativity as well and will communicate their enthusiasm to students.

This approach gets around what Angela called "faking" or teaching to a prescribed goal, whether that's grit or mindset, without a great understanding of what needs to be done to achieve or support the goal. Instead, if teachers are hired because they are intrinsically creative or imaginative, then they can teach from that starting place, without faking the approach for their students or administrators.

In keeping with this, Diane envisioned the death of imagination for schools that don't understand the underpinnings of imagination or creativity, and yet attempt to teach some sort of curriculum meant to foster it:

I can just imagine seeing lesson plans with someone saying, "Okay, today we are going to be talking about imagination. And we're going to be working on this for the next two weeks, and we want to see this improve." And I think that this would be almost the death of the improvement of imagination. I can just imagine a lesson plan around this, and I'm going, *Oh my god, this would be just awful*.

Why teach? What is the personality of an educator?

Scott asked the group to articulate the character strengths of an educator, the traits that really drive people to teach. Diane kicked off this discussion with three traits she proposed to be basic competencies for educators: optimism, dissatisfaction with the current state of affairs, and willingness to change.[1]

Diane described her own optimism as something she does not reveal often, lest others fail to understand her motivation and shut her down:

> I actually can imagine a society where most people have a sense of well-being. And we don't have poverty and we don't have war, and we don't treat people in the horrible, horrible ways that we treat them. But the only way I can imagine getting to that place is through education. And education of the masses. And I think that education has to be one that honors and respects individuality as a means towards embracing difference. Because that's what I think is necessary for that type of society that I can imagine. And so what excites me is thinking about, and working on, and creating places where we're educating kids, where it's not just lip service to say, "You really are the future and you have an opportunity to create a different and better future for us." And then thinking about how to do that at scale because that is, I think, potentially what it takes.

The second trait of the educator seems to be dissatisfaction with the status quo, something many teachers experience and yet don't feel empowered to do anything about.

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[1] Interestingly, Martin pointed out that this triad— optimism about the future, dissatisfaction about the present, and being comfortable with change—is also "a pretty good recipe for creativity, as well."

Finally, the group, led by Diane, discussed being comfortable with change, although the point was made that many, many educators are not comfortable with change, and those people are gumming up the works and holding themselves back. Diane points to this willingness to embrace change as the key factor in Summit Schools' success: soon after they were named one of the most innovative and successful school systems in the country, and to the surprise of others in the field, they up-ended their entire system in pursuit of something that might work even better.

Educators resistant to change may be operating out of fear, discomfort, simple exhaustion, or reluctance to embark on another change for the sake of change (as opposed to real, effective change that will improve education). It's so hard to know what's a fad (tech, flipped classrooms, etc.) as opposed to evolution in a positive direction.

Diane described this reluctance, even among charter schools that bill themselves as "laboratories for innovation" as *fear*, stating,

> There's huge reticence there, in that community to change anything. And it comes back to, they have these results, they have this funding. They're very scared or nervous to disrupt or change anything. They'll tinker around the edges. It's the exact same things that Jess was just describing. And I actually see administrators as middle managers. They don't have any more agency or control really. They're in a system and it's about efficiency. So to your question, it is not safe to question the way we do things. And it is not well received, at all. Even in a group of people that's supposed to be doing that work.

The default mode network and education: how can schools stimulate

perspective-taking, personal meaning-making, and mental simulation?

How can neuroscience inform the cultivation of imagination in school settings? Research on the default mode network may provide answers to this question. As Scott explained:

> The default mode network has three components to it. I think that would be a good segue into how these three things are relevant to education. So, one component of the default mode network is *perspective-taking*, your ability to imagine the thought of another person. The second main component is a *personal meaning making* system. So, whenever we tag anything as relevant to our own personal concerns, this component of the default mode network lights up. And the third component is *mental simulation*, which is your ability to simulate the future and think about future possibilities.

Stephen Hamilton, Dean of the Graduate School of Education at High Tech High, posited that High Tech High encourages students to engage in the three components of the default mode network because it is operating from a perspective of project-based learning, and all learning is fueled both by the teacher's passion for the subject(s) and the students' passion for the individual lines of inquiry.

To add to this topic of passion, Scott explained that the second component of the default mode network, the personal meaning making system, often interacts with the "salience network", which processes certain types of input as more interesting to us than others:

> So, what the salience brain network is for is help mediating what's interesting and what to allocate our limited resources of attention [toward]. So, when our executive attention network is focused outward and we're bored to death with what's going on, the salience network is responsible for daydreaming because it's then turning inward. But most of daydreaming is useless content, right? So that's why in school, we

denigrate daydreaming. But I would argue that the salience network also has another finding and that's that when we find something exciting going on inward, in our own mind, then we allocate all of those intentional resources to mindful daydreaming

School tends to be concerned with the more linear, organized modes of thinking and learning. We ask students to focus, to manifest visible, outward signs that they are concentrating on one teacher, one line of inquiry, one concept, at a time. This model of education does not, however, value the same student daydreaming, doodling, or thinking about connections between the material and their own lives, or between seemingly disparate topics.

In order to take advantage of the salience network and the learning benefits of the default mode network, educators are going to have to give more credence to the value of imagination, daydreaming, seeming tangents, and the connections students must make between curricular content, their own lives, and the larger world. As pointed out by Stephen, schools like High Tech High, that encourage independent inquiry and the value of finding relevance and the winding, personal route students take toward discoveries, are allowing them to learn in a way that leads to more durable, real-world applicable knowledge.

The Avenues School in New York City, has tapped into the power of relationships to activate these brain circuits. Mark Gutkowski, Director of Mastery at Avenues, described the philosophy of this approach as follows:

> In the Mastery Program, we're giving kids substantial time and space in their school day to develop exceptional skill in some domain. But not all kids know what they want to use this time for. Some of them don't even recognize that they are good at something. So we begin by trying to figure

out the core of that student. We do tons of work in terms of personal exploration, identifying the things that they connect with, searching for things that inspire them. We look at character strengths, trying to figure out, *Who is this kid? Do they even know who they are?* And then, we deliberately open up opportunities within the school day for them to explore those individual passions inside.

When kids are allowed to imagine, to dream about who they might be in the future, and fall in love with that vision, they are, according to a study Scott cited by E. Paul Torrance, more likely to have high creative achievement over their lifetime. The Future Project illustrates these principles. By specifically asking kids to dream about what they could become, and through visualizing and falling in love with their future selves, students become more likely to manifest that vision.

How can we apply imagination concretely to education?

Diane reported spending most of her waking hours thinking about this question, so the attendees deferred to her to open the discussion on this topic. She had realized early on that the relationship between the teacher and the student is at the center of learning, and therefore the creative and imaginative process. The first day of school is not, she argued, the best place to begin building this relationship, given the amount of baggage, expectation, and bias that accompanies the formation of relationships in the classroom setting. Summit Schools wanted students and teachers to get to know each other in a much more personal, organic way – so they take the students camping. At first, they ask the students to engage in activities inspired by the adults' passions, such as yoga, basket-making, flag football, and so on. Then the adults encourage the students to open up about their own passions and create their own activities based on those interests. This

allows the teachers to get to know what the students care about, as the students begin to

understand what the teachers care about. When the students and teachers arrive back at

school, Summit does not simply dive right into classes, they practice the collaborative,

shared learning process together, so everyone understands how they plan to support each

other now that they know each other well.

Similarly, Boyd White, Senior Program Manager of Curriculum at Johns Hopkins

Center for Talented Youth, stressed the importance of creating schools that "fit" children,

schools that are designed for them, to be a place for their learning, not for adults'

convenience, and offered the following anecdote:

> There is a great novel by Henry Roth called *Call It Sleep,* which is
> about Jewish neighborhoods in New York at the turn of the century. In the
> opening sentence of it, the narrator is a five-year-old boy trying to reach
> up and turn on the water faucet in the sink. And he's not tall enough to
> reach it. And he realizes at that moment, that the world isn't made for him.
> And I think that's essentially the way children feel. […] And so when you
> think about what the function of education should be or could be, in some
> ways it feels like the best we can do is to give them the ability to imagine
> their own futures, to construct a narrative which they control.

While the vision of children orchestrating their own passion projects with the help

of supportive, enthusiastic teachers is a beautiful one to contemplate, Mark pointed out

that this vision is not as easy to implement as it might seem. Traditional systems and

structures inside of most schools are antithetical to this type of learning and pose real

hindrances to innovative approaches to education. As a consequence, some teachers may

not feel a need to move in the direction of novel approaches, even approaches proven to

work, without a little push. Others, who are laboring to innovate in the classroom, may be

actively discouraged by policies and administrative practices that seek to maintain the

status quo in fear of the disruption that change poses to an established system. For overwhelmed, overworked teachers—most of whom have had decades of experience as a student in the traditional model—it's often easier to stick with what's been practiced and polished for years. That format, more often than not, is a lecture. But he celebrates those teachers and administrators who are trying to change the current system, imploring them not to give up hope because he believes that internal pressure will eventually shatter the old model.

In order to move teachers in the direction of imaginative, creative innovation that works, it will be important to have both education (professional development) and models in place to cement that vision and ensure movement.

Stephen explained how this sort of education and mentorship works at High Tech High and its affiliated graduate school:

> This is a reason why we have a graduate school of education associated with our schools. Because it's hard to find the teachers who know how to do this kind of work, it's a way of preparing them. […] Every single day, there is time for the teachers to meet as a subject matter team, as a grade level team, as an entire school. They have copious amounts of professional development time, which for the most part the teachers themselves plan and run. […] There is time set aside for teachers to work together, and for teachers to come up with these great ideas and share them and get them sort of vetted by other teachers, and that's really quite critical to their ability then to enable students to do wonderful things.

Teachers need this sort of training and support in order to get over the hump of innovation, the natural resistance to changing everything about the way they teach. Often, teachers spend years honing their lessons and their craft, and it

can be frustrating and disconcerting to be asked to change their methods in the absence of this sort of institutional support and enthusiasm. Diane went so far as to say that it's impossible to change schools one teacher at a time or one class at a time. In order to effect real change, the entire school must be rebuilt from the ground up, something Summit Schools has done not just once, but twice, in the pursuit of innovative, exemplary education.

The biggest obstacle, argued many of the educators at the table, was not money, but time and quality professional development. Diane pointed to the 55 days of professional development allotted at Summit Schools as one of the most important elements of their success.

> We're 14 years in with our teachers having 55 days of professional development, non-teaching days built into the year. 55 days. And that doesn't include the summer with a whole enrichment set of time there. And what we discovered with that is, yeah, some teachers do amazing things with that time and, as I think systematically about everything, and scaling everything, that is necessary but not sufficient to get us where we want to go for all teachers and all kids.

Andrew Mangino, cofounder & CEO of The Future Project, reminded the group that while buy-in from teachers is an essential element of success when up-ending an educational system, so, too, is buy-in from students. Students must see that their school or program is not just another gimmick or attempt to con them into compliance. In Andrew's manifestation of that innovative system, they have created a position in the school called the "Dream Director"—"a leader dedicated to unlocking the greatness of everyone inside it". The Dream Director works in a

single high school to create a culture of imagination, curiosity, grit, and

possibility. As Andrew noted,

> Dream Directors would encourage teachers […] to share more
> authentically, openly and powerfully in their classrooms, why they do
> what they do and their passions outside of school and so forth. Students
> would start to enjoy their company more and feel deeply connected
> authentically to them. And so you start to think about how we can start to
> loosen the distinction between teachers and students and all these people
> and all these roles and just sort of reimagine, even our perspective of what
> a school is, to be a place where everyone together is learning how to live a
> more extraordinary life and create that for others.

Neil arose out of his "deep valley of default network" to raise some concerns

about this utopian vision of education, particularly when it comes to scaling the vision up

to a system, or a district, or a nation. He described the problems IDEO (a global design

firm dedicated to innovation) has faced when a large organization, such as a bank, sees a

creative or innovative approach to business, and simply asks IDEO to "give us that,"

without changing the basic culture of the business. Some businesses, such as banking,

finance – the more historically conservative industries – can't just "have that [an

innovative, creative business culture]" because the people who work in that industry are

not innovative, creative types. Neil stressed caution in our pie-in-the-sky optimism for

operationalizing something akin to Summit School's approach to education in other

contexts that may not be receptive or able to make those kinds of radical shifts in

mindset.

**What would the one essential feature of a school that brings out imagination
and creativity be?**

Diane's immediate response was: "porous school walls," meaning that kids could "flow between the outside world and the community in the building, and there is a natural flow between outside and inside and within the building."

Summit Schools has accomplished this end by putting their furniture on wheels and installing giant glass garage doors that can be opened and closed. The spaces evolve with the learning and demands for room. Andrew envisioned a re-imagination of the diploma, "From something that delineates something you've accomplished in the past, [into] something that is reflective of the extent that you've gotten in touch with the possibilities of your future." Mark yearned to break down the divisions between standard content areas, away from the concept of discreet subjects, like science and English, that kids study in isolation, toward a more holistic, integrated approach that reveals the beauty of connections. Avenues has moved towards this type of learning in the establishment of a three-hour interdisciplinary block where students work daily in teams on collaborative projects that transcend traditional content areas.

Martin exclaimed that he attended such an inspiring institution – the Wilson Society at Princeton University, created as an anti-club system affiliation of 150 like-minded undergraduate students who gathered for the free generation of ideas over dinner, "And every night we'd be at dinner with a couple of faculty members talking about physics or math or psychology. It was perfect. I've been trying to duplicate it all my life." Martin suggested that to do so, researchers and educators still need a good theory of imagination in education.

Some of the attendees said that they could not come up with a single, unifying theory, and Stephen went so far as to say that identifying a single, unifying theory of

education is folly. "I think you're going down a dead end if you try to find a unifying theory before you make schools better. I think schooling is far too complicated to be theorized comprehensively. I think it takes multiple theories that relate to multiple dimensions." Stephen's point, that there is a disconnect between education theory and practice, was understood by attendees to be a valid concern. Similarly, Jess articulated her one essential element for a successful, innovative school as "relevance – that, at the very least, we have to show kids that what we're teaching them has some relevance to something else. Whether that is to them or that is to the world."

Andrew linked this concept of "relevance" to the opposite of boredom, and to the very act of living:

> I think we're also talking about life, being fully alive. I think that there's something about all of what we're talking about right now which goes back to something which is deceptively simple, which is just life. […] It's not just a unifying theory of education, it's a unifying theory of life. How to live a great life.

This concept of "being alive" was articulated by Andrew as "excitement, it's what lights it all up. It's what gets you closer to your core humanity, essentially." While some attendees disagreed with the concept of boredom and excitement as being at opposite ends of a spectrum, most agreed that encouraging kids to find a use for boredom – whether as an engine to move within, into their own thought processes (as Diane does), or by moving out into the world – is one way we can help engage students (or, rather, teach them how to engage themselves) and find paths to their passion and inspiration.

Mark realized that one theme we'd been circling around all day with our discussion of daydreaming, education, and imagination was this: "So really, maybe, ultimately, when we're talking about imagination inside of education, one of the things we need to make sure that we're allowing and supporting in our classrooms is the opportunity for children to create and then recreate and then recreate again their own versions of themselves. This type of transformative flexibility is the key to best preparing students for the uncertain futures that they will be facing."

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After an entire weekend of circling around the topic of imagination and creativity, the one thing that everyone could agree on is that there's no simple formula or magic ingredient, no *one thing* that fosters creativity in education. Nevertheless, schools can make a number of changes to their culture to increase the chances that a "creativity weather system" might form, a system that might just coalesce into a perfect storm, causing creativity to rain down.

But it wasn't until the final hour of the retreat that the attendees realized we had never established a working definition of imagination! Scott offered his definition for the record: "Imagination is our ability to simulate realities that aren't currently existing to our senses, take the perspectives of others, and to make meaning out of our experiences."

Martin pointed out that he does not even have a working definition of imagination, and that imagination may well be optimally defined or redefined *after* a weekend of debate about its genesis, nature, and nurturance.

If we were to define imagination in terms of education, based on our discussion over the weekend, imagination – this critical piece of learning, passion, and agency – is best defined as what allows students to know what could be, to have hope, and to find ways to turn that hope into reality.