

Spring 5-24-2018

Meaning and Purpose in Adolescent Education: How Educators Can Help Adolescents Develop Purpose and Use It To Maximize Meaningfulness in Their Lives

Andrew L. Smith

Follow this and additional works at: https://scholarworks.umb.edu/cct_capstone



Part of the [Secondary Education Commons](#)

Recommended Citation

Smith, Andrew L., "Meaning and Purpose in Adolescent Education: How Educators Can Help Adolescents Develop Purpose and Use It To Maximize Meaningfulness in Their Lives" (2018). *Critical and Creative Thinking Capstones Collection*. 370.
https://scholarworks.umb.edu/cct_capstone/370

This Open Access Capstone is brought to you for free and open access by the Critical and Creative Thinking Program at ScholarWorks at UMass Boston. It has been accepted for inclusion in Critical and Creative Thinking Capstones Collection by an authorized administrator of ScholarWorks at UMass Boston. For more information, please contact libraryuasc@umb.edu.

MEANING AND PURPOSE IN ADOLESCENT EDUCATION:
HOW EDUCATORS CAN HELP ADOLESCENTS DEVELOP PURPOSE AND USE IT TO
MAXIMIZE MEANINGFULNESS IN THEIR LIVES

by

ANDREW L. SMITH

©

SYNTHESIS*
MASTER OF ARTS
CRITICAL AND CREATIVE THINKING
UNIVERSITY OF MASSACHUSETTS BOSTON

May 2018

Advisor: Jeremy Szteiter

Abstract: This capstone project serves as the culmination of my inquiry throughout the Critical and Creative Thinking (CCT) program, a graduate program at the University of Massachusetts Boston. It focuses in the area of adolescent education, relying primarily on relevant research and personal narrative reflection. The more pedagogical lines of inquiry draw from my experience as a school administrator in addition to my work in the CCT program. The central thesis is that an ideal aim of adolescent education is to help students develop and articulate a clear statement of purpose. That by doing so, students may leverage the powerful intrinsic motivation that is characteristic of purpose and use it to maximize the chances that their learning experiences bring them closer to a state of meaningfulness, defined in this paper as a deep sense of personal wholeness and fulfillment, similar to Mihaly Csikszentmihalyi's concept of flow. The paper's audience is adolescent educators - teachers, administrators, school leaders - who seek to make more immersive, effective, and holistic learning experiences for students. The paper is subdivided into two parts and a significant set of appendices. *Part I: Adolescent Education And Meaningfulness* examines three main concepts and articulates the relationships between them; meaningfulness, purpose, and adolescence. The concept of adolescence is presented in two subdivided sections; neurological and psychological perspectives. *Part II: Envisioning The*

School Guided By Meaningfulness provides a closer look at adolescent education in practice and posits some pedagogical applications of the concepts advanced in Part I. *Appendices A-E* includes five example lesson plans taken from a more comprehensive curriculum that teaches reflection skills and is influenced by the concept of meaningfulness. *Keywords:* meaningfulness, purpose, adolescence.

* The Synthesis can take a variety of forms, from a position paper to curriculum or professional development workshop to an original contribution in the creative arts or writing. The expectation is that students use their Synthesis to show how they have integrated knowledge, tools, experience, and support gained in the program so as to prepare themselves to be constructive, reflective agents of change in work, education, social movements, science, creative arts, or other endeavors.

TABLE OF CONTENTS

I.	INTRODUCTION.....	5
II.	PART I: ADOLESCENT EDUCATION AND MEANINGFULNESS	
	A. The Case for Meaningfulness in Learning	
	1. Personal Reflection on Meaningfulness.....	6
	2. Meaningfulness and Learning.....	10
	3. Vulnerability and Authenticity.....	11
	B. Developing Purpose	
	1. Benefits of Purpose.....	12
	2. Developing, not Discovering, Purpose.....	13
	3. Teaching Purpose Development.....	15
	C. Adolescent Development	
	1. A Neurological View.....	18
	2. A Psychological View.....	21
III.	PART II: ENVISIONING THE SCHOOL GUIDED BY MEANINGFULNESS	
	A. Preparing for an Uncertain Future	
	1. 21 st Century Skills.....	23
	2. Conceptual Learning.....	25
	3. Experimentation in Teaching and Learning.....	27
	B. The Meaningful Learning Environment	
	1. Creating a Meaningfulness Curriculum.....	28
	2. The Science of Gratitude.....	29
	3. Creating Great Relationships: Active Communication.....	30
	4. Creating Great Relationships: Navigating Conflict.....	30
	5. Volunteering and Working for the Common Good.....	31
	6. Finding and Applying Signature Strengths.....	31
IV.	CONCLUSION	
	A. Limitations and Areas for Future Work.....	33
	B. CCT and EXPLO.....	34
V.	REFERENCES.....	36

VI. APPENDICES

A. Appendix A: The Science of Gratitude.....43

B. Appendix B: Creating Great Relationships: Active Communication.....46

C. Appendix C: Creating Great Relationships: Navigating Conflict.....48

D. Appendix D: Volunteering and Working for the Common Good.....51

E. Appendix E: Finding and Applying Signature Strengths.....53

INTRODUCTION

“That which is learned without joy is forgotten without sorrow” is a Finnish proverb that’s anchored much of my inquiry throughout the the Critical and Creative Thinking (CCT) program, a graduate program at the University of Massachusetts Boston. The phrase has been a northstar for the organization where I work too. Thus, inquiry into making learning meaningful, especially for adolescents, has really united my personal and professional journeys over the last several years.

There are many ideas addressed in this capstone project that emerged from the CCT coursework and from my work at Exploration School Inc. (EXPLO), an educational non-profit that specializes in summer enrichment programs, where I work full time. In my early years at EXPLO and toward the beginning of CCT, I learned that in many ways a good education instills in students a disposition toward critical inquiry and provides a suite of creative tools that can be applied in a wide variety of contexts. As this understanding about the nature of education emerged, it begged the logical question, what makes *that* a good education? Of all the emphases that could comprise the learning process of adolescents, why am I so confident that the vision that emerged for me throughout EXPLO and the CCT program is objectively good? This question guides my current work at EXPLO and the second part of my experience of the CCT program. As I engaged with it, I kept coming back to the concept of meaningfulness.

Often applied through my work with EXPLO, I found that developing one’s purpose and using it to access a deep sense of personal meaningfulness really emerged as the ideal product yielded from a great education. As I moved through more of the CCT work with purpose and meaning as the backdrop of my inquiry, I found it to be a compelling paradigm because of its inclusive nature, tendency toward practical application, and broadly prosocial elements. For these reasons, the central idea that guides my capstone work, and that will serve as the starting point for future work in this area, is simply that a great education for adolescents can provide the foundation for developing a clearly articulated purpose and leading a life enriched by regular access to a state of meaningfulness. To that end, in this capstone project I pursue the following question: how might adolescent education help students develop a purpose that drives them toward a boldly lived life full of regular access to the holistic and fulfilling state of meaningfulness?

PART I: ADOLESCENT EDUCATION AND MEANINGFULNESS

The biggest problem growing up today is not actually stress, it's meaninglessness.

Bill Damon, Director of Stanford Center on Adolescence (Lobdell 2011, n.p.)

A. The Case for Meaningfulness in Learning

Personal Reflection on Meaningfulness

The clearest barometer for my own personal state of meaningfulness at any given time is for me to monitor my thoughts as I lay down to go to sleep. For many there are sleep rituals, probably better ones, that help them to fall asleep quickly. In this practice, I enter a mental space where I allow my mind to be active, without judgement or intervention. At its best, it's a form of meditation; I'm relaxed and simply aware of the thoughts moving through my mind. Being aware of my mind, as if it's a film that I'm watching, provides many benefits. I am able to observe and become aware of my own mental tendencies like rehearsing anticipated future situations and rationalizing mine or others' past actions. Awareness helps me to see the limitations of my thinking mind beyond my own tendencies too. For example, awareness exposes just how inclined my mind, like many others, is toward repetitive thoughts (Feldman 2010, 1002). It also provides an opportunity to experience how directly tied my body is to those thoughts; many can relate to the sweaty palms, accelerated heart rate and general panic that can be observed in the body in response to a repetitive, anxiety provoking thought. Many, also, can relate to the antidote to this experience, the moment of awareness that exposes the repetitive thought as a repeating and unhelpful mirage, and in that moment you think, *'Wait, am I panicking about something that hasn't even happened? Why am I getting myself so worked up?'* This awareness of my own thinking has been a gift because it's an opportunity for me to choose to give myself a break. When my mind starts veering off in an unhelpful or anxiety producing direction, I'm more likely to recognize it and thus more able to choose where my mental energy goes.

With awareness and practice, the mental routine I've cultivated for this one period of the day sends my mind as a default toward that which gives my life meaning on a day to day basis.

Lately, this routine has sent my mind in the direction of a somewhat latent hobby of mine: woodworking. I've long enjoyed the process of designing for function and aesthetic in many areas of my life, and the medium of wood provides just the right combination of characteristics that makes me feel maximally engaged and connected with a deep part of myself. This is Csikszentmihalyi's (2004, n.p.) concept of flow: the optimal human experience achieved during experiences where the degree of challenge is in perfect proportion with a person's skills, interests, and confidence level. For me, the challenges of woodworking require my skills in problem solving, design, mathematics, creativity, and even physicality. As is a hallmark of flow, when I am engaged in woodworking, my mind is so fully stimulated by the task that I do not have enough processing capacity left to monitor the ordinary processes of life (Csikszentmihalyi, n.p.). In much of life, for example, I have a habit of filling silent times with music or podcasts, out of habit I typically start something playing at the outset of most woodworking sessions, but find that by the end I was unaware of whatever was being said or sang. On more than one occasion, I have completed a woodworking session, and within a few minutes find that I am significantly dehydrated because I have forgotten to drink water throughout. In fact, it's now a rule of mine not to start a woodworking session without a few basic things on hand including a large jug of water and a prominent clock or a set alarm that will tell me when the time for that session needs to be up.

Woodworking is a passion of my creation, not something that I simply one day discovered and to which I was immediately enamored. There are many other expressions of function and aesthetic that I've tried and which did not resonate; I've tried several different musical instruments and music composition, creative writing, computer coding and website design just to name a few. In most of these cases, I was in a state Csikszentmihalyi would deem "anxiety", which is a state where the challenge is very high and a person's skills in relation to that challenge are low. Despite logging many hours in pursuit of these hobbies, my skills never advanced to a point where they came into a more beneficial alignment with the challenge.

It stands to reason that something about woodworking made it different for me and helped to precipitate its elevated role in my life. I've been around design and problem-solving inclined environments much of my life; my father is an engineer who spent much of his spare time building beautiful cedar strip canoes and maintaining the engines of the family's fleet of cars (once all three of my siblings and I were old enough to drive and had purchased our first

beater cars). Both my parents and one of my brothers, actually, are trained engineers and I find, for them, that connection with people is often most readily accessed through design thinking and problem solving. I fondly recall some of the moments I was most connected with my Dad taking place while engaging with a tangible, material problem most often involving wood or similar material; creating a birdhouse, designing and building a pinewood derby car, replacing a broken flywheel on my first car, or spending hours on Christmas morning figuring how to set up a new toy with 15 pages of set-up instructions.

As is the case for most people who ‘discover’ a passion, woodworking was not an immediate flow state for me, and I’m sure the first time I encountered a woodworking project it similarly resided in a Csikszentmihalyian state of anxiety. However, unlike those other hobbies which never took, something helped advance woodworking for me, from a state of anxiety to a state of arousal, and then, much later, to a state of flow. I suggest that woodworking awakened dormant skills that were within me through a combination of pursuing related activities as a child with my Dad as well as more active skills which may have been cultivated in other areas; like a love of music helping me to develop a sense of personal aesthetic, studying math and science in school providing many complex problem solving skills, and my background in athletics developing a kinesthetic inclination activated by the physicality involved with woodworking. In the initial stages of my relationship with woodworking, the activation of these skills in response to the challenges of woodworking seemingly triggered enough of a positive feedback loop that I moved into a Csikszentmihalyian arousal state.

The arousal state is characterized by alertness and focus, and on the Csikszentmihalyian flow continuum is the state accessed when the challenge is high and the relevant skills for meeting that challenge are moderate. In this state, I can recall trying projects, making some progress, and then encountering challenges that were so frustrating that it stymied progress, causing me to walk away, at times in frustration. In this state, woodworking was one of a handful of interests that I’d dip into as time or energy permitted, I could leave the hobby for long stretches of time and not notice, filling my time with other new interests as they arose. On occasion, circumstance would bring woodworking back into my life - the need for a cutting board, projects involved with moving into a new house, building a nursery for my newborn daughter - and the interest was restimulated. As I took on projects, I would necessarily add new skills like fluency with a new tool or learning to use design software to draft a functional model.

These woodworking specific skills and my set of more fundamental interests and dispositions came into alignment such that I began experiencing successes in the realm of woodworking, even occasionally surprising myself when something came out better than I'd imagined it. Those first early successes built my confidence and were a big part of what moved me toward the Csikszentmihalyian arousal state.

To transition from the arousal state toward accessing a state of flow is a profound experience. In the realm of woodworking, I found the experience to have an exponential quality. Soon, I was consuming information about new tools and techniques at an accelerating pace, reading and researching with almost no effort. Out of the woodshop, my mind would turn design challenges and planned projects over throughout the day. In the woodshop, the experience was like my body and mind were a mere vessel, as if the project concept and execution were coming through me, but weren't my own. I can recall putting projects together without referencing any paper notes, not because I didn't have a plan, but because my mind had already anticipated every cut, joint, and angle. It was as if I was an actor on stage performing a play I'd rehearsed a hundred times before.

For me, woodworking presents a challenge that nearly perfectly aligns my skills, interests, and disposition, and that regularly results in access to a flow state. It's this access to "the ideal state of human experience" that has moved woodworking in my life from an interest to a hobby, and from a hobby to a passion (Csikszentmihalyi, n.p.). As I reflect on this evolution, it's clear to me that a different set of experiences when I was younger or a different set of life circumstances could have resulted in a passion for something else; just as easily in cooking, photography, or wine-tasting. Furthermore, it's also clear to me that woodworking was not a passion which I 'discovered', as it is often described, but rather a passion that I cultivated by working at it over time, and which now brings my life tremendous meaning.

In many ways, the evolution of woodworking in my life is analogous to the process I envision being afforded to adolescents by their schools and teachers in pursuit of learning more closely aligned with a personal sense of meaningfulness. In much of contemporary educational practice, acquisition of skills and knowledge comes without the context of meaningful, personally relevant challenges (Orlin 2013, n.p.). Woodworking provided, for me, a challenge that gave the acquisition of a whole host of other skills and knowledge a context that unified them in my mind. The drive to quickly acquire the skills and knowledge necessary to improve as

a woodworker has pushed me to learn basic 3D modeling, study design theory, dig into the chemistry of wood and wood finishes, and acquire biological and historical knowledge related to tree species and growth patterns.

My experience with woodworking is a useful lens into the kind of learning I'm pursuing in this capstone project because it showcases the benefits of learning in pursuit of the development of purpose, and it details the self-fulfilling satisfaction of entering a state of meaningfulness. Like the woodworking skills I rapidly acquired, when a school or teacher is able to help a student develop and articulate purpose, learning naturally follows because the acquisition of the relevant skills and concepts necessary to act on that purpose are swept along by the line toward meaningfulness that's drawn by the articulation of that purpose. As in the later phases of the story of my woodworking hobby, once purpose is established and the learning has a context, then the traditional barriers to learning have a way of simply falling away; boredom outmatched by new ideas, fatigue replaced by curiosity, repetitive work replaced by deep engagement.

Meaningfulness and Learning

Within the context of this discussion of adolescent education, 'meaning' and 'purpose' are linked ideas. That said, it's worth teasing out working definitions of these terms, even just to more fully engage with the arguments put forth in this capstone project. 'Meaning' is a deep and personal state of being that most fully connects a person with a sense of personal wholeness. Meaningfulness is not a goal state that's worked toward and then eventually achieved, but rather can be accessed at any time, often through activities, ideas, or conversation that connect people with the deepest and most authentic elements of themselves and their values. 'Purpose', by contrast, is worked toward in a person's life. It's a coordinating force that animates a person's efforts and actions toward a desired set of outcomes. The intersection of the two concepts is key to a complete understanding of my argument around adolescent education. Purpose is a powerful, motivating force in a person's life which propels them toward deep engagement with challenge, learning, and community. The fuel of that force is the fact that one's purpose in an expression of what brings meaning to their lives; purpose *connects* you with who you are most authentically by pushing you toward moments that access the deep state of meaningfulness. Research in this area is plentiful, if still a bit nascent, and underscores these definitions,

suggesting purpose is “a stable and generalized intention to accomplish something that is at once meaningful to the self and leads to productive engagement with some aspect of the world beyond the self“ (Bronk 2010, 79).

To return to the woodworking example, one purpose in my life is manifesting ideas in the world that are as intentional in their function as in their form. Woodworking, then, is an expression of that deeply held purpose in my life, the pursuit of which fills me with drive, energy, and passion to learn what I need in order to improve. That’s why another way to think about Csikszentmihalyi’s work is to think of flow as characteristically *that which brings a person closer to the deep and fulfilling state of meaningfulness*. For me, the drive to improve as a woodworker gave the acquisition of the necessary set of skills and knowledge context. Studying, reading, and practicing fundamental skills are still very effortful processes, but the woodworking hobby gave me a clear expression of purpose that helped me to elevate and supply enough effort to consistently engage with the learning challenges necessary for improvement in this area. This is the benefit of developing purpose in learning environments, it increases the chances that students can access the deeply rewarding state of meaningfulness. The power of this state can drive them toward engagement with challenges far beyond what they may ever have envisioned being within their capacity. In this paradigm, education is less a process of mustering the effort necessary to complete a task, but rather a wholehearted pursuit of one’s curiosities, driven and contextualized by a clear purpose and rewarded by increased access to meaningfulness.

Vulnerability and Authenticity

A learning environment structured around accessing meaningfulness then, by definition, is oriented toward authenticity, connection, and development of the understanding of oneself. Shame and resiliency researcher Brene Brown in her book Daring Greatly draws out how vulnerability is a key characteristic of these kinds of meaning-oriented environments. She describes vulnerability as daring to “show up and let ourselves be seen” (Brown 2012, 2). It’s a poetic and inspirational way of describing how vulnerability feels, and when applied to the classroom, I suggest it provides an emotional and intellectual blueprint for how learning oriented toward meaningfulness could feel too. The book illuminates its thesis by occasionally referencing Theodore Roosevelt’s famous speech *Citizenship in a Republic*, which is sometimes remembered as *The Man in the Arena* speech, for its famous line, “The credit belongs to the man

who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again...” (Brown, 1). Brown’s definition of vulnerability similarly taps into the idea that it requires daring and courage to engage, to ‘show up’.

Vulnerability, then, is a key part of learning that moves us closer to meaningfulness because it requires daring and courage to *show up* and engage with the learning process; to show up despite the chance of being wrong, the possibility of rejection, the social risk, the prospect of trying and failing. The Roosevelt speech continues:

Because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly (Brown, 1)

This is ‘to be seen’, to be vulnerable enough to expose our true, authentic self to the great risks of engagement. ‘To be seen’ is to put down that which shields us and to apply our true selves, with all our strengths and all our shortcomings, to that endeavor which exposes us to a real chance at disappointment and failure, but it also opens us up to accessing meaningfulness. Learning that invites exposure of one’s authentic self is, in some senses that are truest for adolescents, an existential risk, but its reward is powerful. A school or teacher oriented this way can only provide opportunities to access meaningfulness, but are rarely, if ever, able to provide instruction so intrinsic and personal as to activate students’ states of meaningfulness; they’re too obscured, even to the students themselves, to be known to their teachers in a useful way. Therefore, instead of pursuing meaningfulness directly, the most powerful tool these environments can provide to students in the pursuit of meaningfulness is to help students develop that which maximizes the chances they realize meaningfulness on their own; purpose.

B. Developing Purpose

Benefits of Purpose

The development of purpose is the most reliable and scalable way a school or teacher can help students access meaningfulness. A significant body of research surfaces some of the most tangible benefits to adolescents of developing purpose, they include happiness (French 1999, 117), resiliency (Bernard 1991, n.p.; Masten 2002, 76), subjective well-being (Seligman 2002,

3), psychological well-being (Keyes 2002, 1008; Ryff 1995, 720), positive affect (King 2006, 180), and life satisfaction (Bronk 2010, 135). As evidenced by this list, purpose can provide a suite of assets that are valuable unto themselves, but that also make one a more engaged, curious learner.

Unlike meaning, which is a state of being, purpose is a force that can drive a person to learn new skills or knowledge for the sake of furthering the pursuit of an intrinsically motivated aim. It's this intrinsic motivation that makes the force sustainable over the course of an extended period of time; years, decades or even a lifetime. Research into adolescence and goal setting also shows that intrinsic forces are much more likely to sustain adolescents through setbacks and challenges (Blackwell 2007, 246). As a teaching tool, purpose stands nearly alone as one of few truly intrinsic motivators. Grades, exams, positive peer pressure, college admission standards, career success, and pressure from parents are the most commonly applied methods of motivating learning in most traditional schools, and they each share a common hallmark; they're extrinsic sources of motivation. Though sometimes powerful in acute learning situations, extrinsic motivation proves unsustainable as an underlying force toward learning because they rely on an external locus of causality that's too often detached from a person's actual interests and passions (deCharms 1968, 46). This frustrates the basic need for people, and particularly adolescents, to feel a sense of self-determination: a person's need to engage in activities in a willing volitional manner (Vansteinkeste 2005, 484). When schools help students to develop a purpose, it establishes a powerful, sustainable force that pulls the learning of knowledge and skills along with it.

Developing, Not Discovering, Purpose

John Coleman and colleagues were curious about the ways leadership is evolving and changing as the next generation begins to move into these roles across the country and world. They surveyed hundreds of students from top U.S. business schools and found that the set of contemporary challenges seems to require a new emphasis in leadership. In particular, the concepts of purpose and passion arose over and over again throughout their findings. On purpose, Coleman (2017, n.p.) suggests that while some people do experience the classic lightning-bolt-moment where they truly *discover* a guiding purpose, it's actually much more common that people need to work actively toward building purpose instead of passively waiting

to discover it. Schools oriented toward helping students to develop a purpose within their learning lives should be oriented this way too. This paradigm accepts the premise that students are very unlikely to simply discover a purpose while participating in the classroom learning, but that teachers can and should help students work toward building a clearly defined purpose, in part as a means of helping them to better engage with the actual content of the course.

Most teachers have a lightning-bolt story; the student who was struggling in their class until they realized that something about the content of the class connects to their interests outside the classroom, and then they suddenly have more engagement and success within the class. The problem with this more passive approach is its disempowering nature; forwarding the misconception that one's purpose will emerge in a flash of insight if they're patient long enough. Rather, I'd posit that a more scalable, replicable, empowering method for arming students with purpose is to position the development of it within a school as *one of the main reasons we're all here*. Making purpose a named, central goal of the learning process universalizes it and positions it as an obtainable force that a teacher can help students work toward, regardless of the content area they may be teaching. This is, as an example, the teacher who tailors end-of-semester projects to individual students based on a discussion about their goals for the course. Within the CCT program, it's the idea of the Critical Reflection Journal where students compile work and articulate the ways we made connections between course concepts and future actions in our own personal and professional lives.

This kind of teaching could be described as 'student-driven', 'reflective', or even 'holistic', but the central point is that practices like these invite a kind of dialogue between the instructor's vision of the outcomes of the course and each students' vision of the same. This more active, purposeful approach fosters an environment where students are able to create a sense of purpose from the learning opportunity that propels them forward through the learning. Coleman's bottom line suggestion around acquiring purpose affirms the approach I advance, and reads as a useful guidepost for schools looking to help students engage in learning that helps students build purpose, "We should be looking to endow everything we do with purpose, to allow for the multiple sources of meaning that will naturally develop in our lives, and to be comfortable with those changing over time" (Coleman, n.p.).

Imperative (2017, n.p.), an organization that studies the science of purpose with the mission to "empower people to make their work meaningful", suggests that the most productive

and effective employees are those who feel their work is animated by a central purpose in their lives. As such, founder Aaron Hurst posits undergraduate institutions might better serve students by having them declare a purpose rather than a major, citing research that shows only 27% of college graduates ultimately end up in a job related to their major (Abel 2013, n.p.). The current paradigm makes it hard to envision, but Hurst paints a picture of students taking courses in a wide variety of academic areas and acquiring a wide variety knowledge. But, with the primary benefit of helping students articulate a statement of purpose that orients their career and life choices. The research supports such a paradigm shift, at least in the sense that peoples' careers are increasingly unattached from a particular industry or job (Berger 2016, n.p.). The trend suggests people may be best served by establishing a guiding purpose that brings their lives closer to regular moments of meaningfulness, and then seeking working situations that activate that purpose, regardless of the particular industry. The *21st Century Skills* section of this paper unpacks some of the reasons behind this trend, but implications for schools preparing adolescents to eventually enter this environment are clear, that the practical implications of developing a clear purpose is increasing in importance.

Teaching Purpose Development

Teaching purpose in an active way requires commitment and vision, as well as an alignment of time and resources toward this objective. Later portions of this capstone project will propose some specific methodological approaches for teaching purpose, but there's no escaping the fact of their being time consuming and immersive. For schools to make the development of purpose a key outcome of what they offer, the priorities (which are all too often set by entities external to the school) would need to shift (Barton 2009, 7). As explored in the preceding section, an aspect of gaining purpose from learning is students having more control over what and how they learn. This reality stands in tension with the long time priority of education; for students to acquire specific, predetermined sets of knowledge. National and international trends in education toward standardized testing and measurement showcase the primacy of content knowledge acquisition within the field (Sahlberg 2015, n.p.). Developing purpose doesn't necessarily stand in direct tension with the acquisition of content knowledge, but schools' resources are finite and any new priority necessarily diminishes the existing ones. Some independent schools have the flexibility and freedom to radically realign their priorities, and in

those cases, the contemporary teaching and learning practices do look very different from more traditional schools (Mead 2017, n.p.). However, sustainable, systematic change may be better achieved by methodologies that can exist in concert within the existing set priorities balanced by most contemporary schools. This approach transcends the zero-sum mindset that can sometimes lead to hard, and perhaps unnecessary, trade-offs in schools. To do this, it's necessary to make the case that development of purpose will actually make students more engaged, interested and better able to process and apply the information and skills that so dominate the current incentives system that govern the dynamics of most contemporary schools.

Fortunately, schools are already full of teachers and other leaders who are perfectly qualified and able to help students in the development purpose. Research by Psychologist Kendall Bronk (2010, 136) found that simply talking with adolescents, in a deep and sustained way, about what matters in their lives significantly increased their expression of a sense of purpose. Pedagogically, I suggest the actual articulation of one's purpose (a statement, essay, speech, etc.) is the most useful tool because once stated, it becomes easier to identify areas where one might take action and apply their purpose. A clearly defined purpose is also more accessible to teachers, parents and other mentors who might be able to help by asking questions and providing guidance or resources. To that end, Bronk suggests these conversations are best started by asking students to identify what they really care about as a means of surfacing a set of values. These could be questions like "what really bothers you about the world today?" or "what [issue in the world] could you envision yourself improving on?" (Suttie 2016, n.p.). Then, she found the best next step was to help students to clearly assess their own skills and interests. The VIA Institute on Character, for example, has a character strengths survey that offers one such lens and may help adolescents more clearly see their own strengths and skills (a lesson plan that exemplifies use of this survey is featured in Appendix E: Finding and Applying Signature Strengths). With these two pieces of information at hand, values and strengths, it becomes possible to move into a conversation about purpose. Even simple connections can be helpful, 'You mentioned you think animal cruelty is a key concern of yours and you seem to be a very persuasive writer, have you ever considered writing an op-ed about these issues for the local newspaper?'. This patterns helps students to surface statements and ideas that tend to be actionable expressions of purpose. This kind of work, when happening with this backdrop of

working toward developing and articulating purpose, can lead adolescents to engaging in the introspection necessary for developing a statement of purpose.

C. Adolescent Development

Adolescence, the transition from being an adult-dependant child to a self-sufficient adult, is broadly characterized by rapid change in many developmental domains (Quas 2014, n.p.). Among educators who support adolescents, helping students progress academically is only one element of their work. Supporting students as human beings progressing through a period of significant neurological, social, and psychological change often constitutes the ‘art’-side of the art and craft of teaching, and is often a considerable part of what makes an *educator’s* work meaningful to them.

The period of adolescence carries a weight with it that’s felt long after the 18th year, as a definitive part of this developmental process is the formation of identity. The ability to answer the question “Who am I?” requires identity formation and is a bedrock of how adolescents eventually engage with the world as adults. It’s characterized by exploring and committing to many important issues which express personal identity such as “occupation, politics, religion, and sexual behavior” (Introduction 2015. n.p.). As one progresses through adolescence, these and other important aspects of identity become more solidified and eventually become the lenses through which adolescents come to see the world as adults. Thus, educators who support adolescents carry a significant responsibility that extends beyond just the immediate years they’re together. The rapid development - physical, mental, and emotional - is a key part of what gives this period of human development both its unparalleled staying power and is also what makes it a potentially fraught time too. “The breadth of these changes makes the period somewhat risky, given that problems in one domain may spill over and influence functioning in other domains. At the same time though, the transition may also represent an ideal time for interventions, largely for the same reason” (Quas, n.p.). Adolescence is in many ways the ideal time to help students develop a strong purpose that will stay beyond these years, and that will maximize their ability to access moments of meaningfulness immediately and over a lifetime.

For educators hoping to help students engage in this work, a strong understanding of what particular changes are unfolding during adolescence is a necessary base of knowledge that helps them to be responsive to the dynamic set of needs characteristic to this time of human

development. The following sections highlight some of the most important aspects of adolescent development with the aim of providing educators considering a more meaning-driven school or classroom with a sense of how the neurological and psychological developments of adolescence interact with the concepts of purpose and meaningfulness.

A Neurological View

Adolescence is an unparalleled time in human development, and it's perhaps nowhere more exceptional than neurologically. It's a period of human development often thought of as tumultuous and connected to 'the hormonal changes of the teenage years', but with the advent of more advanced brain imaging technologies and related research, it might more accurately be described as a period of significant neurological reconstruction (Roaten 2012, 5). The mechanisms that characterize this period are synaptic pruning, relatively slow prefrontal cortex development, transition and development of the midbrain limbic region, and balances of neurotransmitters which are in flux as the regions of the brain mature non-linearly. Taken individually, each of these factors can help to explain some of the characteristic elements of adolescence, including characteristics like increased chances of depression, low capacity for empathetic reasoning, impulsivity, and emotional volatility (Roaten, 14).

From a neurological perspective, adolescence is the second of two waves of accelerated brain development which occur during the human lifespan, the first of which is most profound and occurs prior to the age of 5. Functional Magnetic Resonance Imaging (fMRI) technology has led to breakthroughs in the field, most notably by helping to update the understanding of the timeline and process of brain development. The process was once thought to be a mostly linear path of development with a consistent rate of growth from formation to full maturation as is more or less the case in other major body organs (Taki 2012, 103). However, the current understanding - as informed by fMRI technology and related research - reveals a more regional development pattern with some periods of rapid growth and change, and some more stable periods too.

The development that occurs during adolescence is characteristically permanent, the patterns established during this period will have implications which last a lifetime. Adolescence is identified in fMRI imaging by increases in white matter called myelin, and decrease in gray matter density; this is the hallmark of the process of synaptic pruning (Roaten, 5). Commonly

referred to as the ‘use it or lose it’ period of brain development, overproduction of neurons, dendrites, and synapses takes place during these years and the brain selectively eliminates those unused or under-stimulated neural pathways (Roaten, 6). The pruning process results in stimulated pathways increasing in efficiency, like the transformation from “an unwieldy network of small pathways into a better organized system of superhighways” (Steinberg 2011, 44). In part, this process is the neurological backing to the theory behind exposing adolescents to a wide variety of stimulating experiences, and fostering the practice of some specialized areas of interest. It’s this process of exposure where opportunity exists for educators to help students begin the process of trying a wide variety of new experiences and reflecting on them in order to assess the potential for using them to develop purpose.

A further implication of the relevant research is that adolescent processing and related behavior tends to be more emotional and impulsive than any other period of life. In particular, research in this area has shown that one of the final areas of the brain to receive myelin - to fully mature - is the prefrontal cortex which generally does not reach full maturation until ~25 years of age (Roaten, 7). The prefrontal cortex is the region of the brain that “mediates negative...and... positive attitude, spatial and conceptual reasoning process, planning, and integration of perception with action across time.” (Siddiqui 2008, 203). Because other areas of the brain mature and receive myelin earlier, they function more efficiently during adolescence, which causes the processes of the prefrontal cortex to be sluggish by comparison. Roaten et. al. help spell out the implications, “While adults rely on their prefrontal cortex to react logically to input, adolescents often rely more on the amygdala when confronted with a decision; they will revert to emotions and instinct” (7). The amygdala is a part of the midbrain limbic region which is also comprised of the hippocampus, together this region regulates emotions and classifies memory input (Roaten, 7). Processing input primarily through this region of the brain - known to be more closely tied with emotional processing patterns - is a pathway unique to this period of human development and has considerable implications, especially for educators who work with teenagers and who are seeking to understand the ways their students process everyday stimuli differently than the majority of the population.

Amygdala-centric processing is an information processing pathway closely tied to emotions, especially when compared to the eventual prefrontal cortex pathway that will emerge in adulthood and which operates relatively distinctly from the regions controlling emotions. The

neurological underpinning of this emotional processing pathway is simply that the same region of the brain where the amygdala resides, the midbrain limbic region, is also an active player in the body's stress-response system. Thus, activation of this region is also related to activation of the adrenal gland, which produces adrenaline and cortisol in response to stress. These hormones provide quick, short-term, high energy responses stimulation (McIntyre 2007, n.p.). It's a response useful when in acute, dangerous situations, but which is decidedly unhelpful in the processing of the minute to minute inputs of daily life, as is the case when the amygdala carries an undue load of this input. Simply stated, the part of the brain that in adulthood moderates input before it becomes emotion is the least developed region of the brain during adolescence. While few would argue this creates a sustainable long-term system for processing stimuli, it's also the case that this neurological reality provides some powerful learning opportunities to adolescents which are not nearly as accessible to a fully mature brain. During adolescence, emotional experiences carry staying power because they are encoded and thus remembered and accessed more readily in future situations (Mackay 2004, 475). Thus, this tendency toward emotional processing is a big part of what makes adolescence the ideal time to introspect on purpose and meaning.

A close neurological examination of adolescence makes it clear that learning at this stage should be thought of as an emotional experience. On this kind of learning, Greenleaf states, "Emotions, then, might be characterized as a the vehicle upon which meaning becomes attached, the canvas upon which the painting is developed and to which is adheres" (2003, 17). Heightened emotional processing in combination with the increased excitability of chemical neurotransmitters are a major reason why there's great opportunity for deep, impactful learning during this period. Dopamine, for example, is associated with attention, memory, learning, and executive function; and is released during and in anticipation of pleasurable experience (Berridge 2015, 6). For adolescents, learning experiences are more apt to elicit an emotional reaction due to increased limbic system processing, and as such they're more likely to stimulate dopamine release, the result of which is deeper and more fully processed learning. While the potentially less desirable elements of this neurological environment may more easily come to mind when reflecting on the teenage experience - risk-taking behavior, emotional volatility, etc. - it's worth considering the significant, positive learning opportunities which are also present.

A Psychological View

Given the emotional processing characteristic of adolescence, motivation plays a key role in effective teaching and learning for this age group too. Especially to motivate adolescents to engage in the deep and intentional work of practicing skills like complex problem solving and creative thinking, intrinsic motivation is requisite. Vansteenkiste et. al.'s research in the area of adolescent motivation extols the effectiveness of intrinsic motivating factors, "it promotes a more integrative and conceptual processing of the learning material, presumably because intrinsic goals, with their closer link to individuals' growth tendencies, induce a more flexible, open, and committed task engagement" (2005, 499). Plainly, adolescents are already primed to engage with learning on an emotional level; if the nature of the learning task requires deep, motivated engagement, it seems the adolescent brain is in some ways especially equipped for the task. That said, there's no greater intrinsic motivator than a deeply held spirit of curiosity that's targeted at engaging with ideas that are personally meaningful. This kind of motivation is a strong driver because making personally relevant connections with a new idea only opens up a network of new questions and conceptual connections. As this landscape of meaningful connections unfolds, personal curiosity only accelerates the process of deeper exploration, connection, and reexamination.

Enjoyment of the learning process is an important aspect of adolescents' development of conceptual learning skills, and it's predicated on students feeling in control of their learning situation. When students experience positive emotions while learning, it leads to better achievement through deeper processing (Hagenauer 2014, 21). Roaten et. al.'s research represents a prominent practice among high school guidance counselors, which is to find avenues that maximize students' simultaneous feelings of freedom and control (18). This practice is supported by research in the area of enjoyment, specifically that a students' perceived degree of control while in a learning situation is associated positively with the highly desirable enjoyment-achievement pattern of learning (Hagenauer 2014, 20). Of course, there are many factors in the daily lives of an average high schooler that can have a detrimental effect on the feeling of control. An increasingly competitive college admissions environment, a national trend of high-stakes content-driven testing, and the increasingly prevalent trend of over-parenting can all lessen the feeling of control necessary for enjoyment of the learning process (Lythcott-Haims 2015, n.p.). Some students also experience more acute situations which go well beyond

decreasing just the perception of control, and impact actual daily control of circumstances such as poverty, domestic violence, and bullying.

Self-Efficacy is also a major determinant of an adolescent's ability to make learning meaningful. As a psychological theory, the seminal work on self-efficacy began with Albert Bandura of Stanford University and the theory has been a fundamental element of many psychological fields, including educational theory. Self-efficacy is the idea that an individual's expectations about their ability to accomplish a desired outcome is a strong predictor of whether coping behavior will be applied once the task is initiated, how much effort will be expended, and for how long that effort will be expended in the face of obstacles (Bandura 1977, 192). Given that the conceptual learning demands of the 21st century require a deeper and more sustained effort from students, this concept is highly relevant.

It's worth noting that self-efficacy is different than self-esteem: the idea that someone has a belief in their own value. Rather, self-efficacy is having a realistic sense of what an individual is personally capable of accomplishing. It's the idea that, in the face of adversity, a person has the ability to accurately assess the task and apply concerted effort to persist through it. In many ways, this concept of self-efficacy maps easily on to the concept of 'purpose' as defined in this paper; an intrinsically motivating force that drives a person toward experiences of meaningfulness. Consider the woodworking reflection in Section A, the purpose *designing for function and aesthetic*, as applied in the hobby of woodworking, drove me to pursue challenging learning in areas well outside my comfort-zone. The intrinsic motivation generated by this purpose tapped into a well of effort which was inaccessible without that well defined purpose at hand. Thus, as setbacks and challenges arose, like the concept of self-efficacy, it was my sense of purpose that propelled me forward and through those challenges. For educators who've encountered the practical implications of self-efficacy in the field, this concept of purpose as an expander of what students feel they're capable of accomplishing is a powerful tool.

PART II: ENVISIONING THE SCHOOL GUIDED BY MEANINGFULNESS

We're so engaged in doing things to achieve purposes of outer value that we forget the inner value, the rapture that is associated with being alive, is what it is all about.

Joseph Campbell, *The Power of Myth* (1991, 6)

A. Preparing for an Uncertain Future

21st Century Skills

The rapidly changing landscape of the world of information, and especially the unprecedented availability of and access to information, is a major driver of the need for individuals to be able to engage in deep learning that results in cognitive flexibility and good thinking habits. The era of acquiring niche knowledge or specialized skills, and bringing those to the marketplace as an economic model of employment, is coming to an end. Technologies like artificial intelligence, advanced automation, and trends like sophisticated data analytics have disrupted knowledge-based industries from driving a taxi or truck to writing law briefs to performing surgery (Shavel 2017, 4) (Lohr 2017, n.p.). The unprecedented abundance of knowledge has led to a knowledge devaluation effect, where the possession of specialized knowledge may previously have been very valuable, but it's now much easier to store, access, and analyze even without special skills or training (King 2011, 719). As an example, consider the impact of websites like Expedia and Travelocity on the travel agent profession. Knowledge about travel deals, locations, and tips previously resided with industry insiders, but is now crowd-sourced, free and publicly accessible in seconds. Additionally, resources like Trip Advisor, which allow users to quickly and easily post publicly available reviews and tips, create a crowd generated base of travel knowledge that's highly disruptive to the prior agent-knowledge driven paradigm. The industry has had to completely pivot around this new reality (Bearne 2016, n.p.).

Compounding, the abundance of access to data has led to the rapid expansion of the volume of human knowledge, such that learning geared toward knowledge-acquisition is taking a backseat to more conceptual learning. The knowledge-doubling curve is a theoretical framework developed by The Buckminster Fuller Institute in response to research which found that the rate

of growth of human knowledge is exponential (Schilling 2013, n.p.). Closer examination of the curve shows that the rate of human knowledge growth, previous to 1900, doubled roughly every century. However, since the turn of the century the rate is such that it's currently doubling every 13 months. Incredibly, IBM projects that by 2025 the 'internet of things' will lead to a knowledge doubling rate of 12 hours (Coles 2006, 10). With nearly incomprehensible volumes of knowable information, and instantaneous access to it, simply acquiring knowledge in a rote fashion is no longer a particularly useful skill. In fact, the Future of Jobs report compiled by the World Economic Forum predicts that the most important skills in 2020 will be complex problem solving, critical thinking, and creativity (Future 2016, 22). This set of skills is markedly different than the knowledge-based set of skills which previous generations required, and around which the traditional school format is oriented. These and other related skills have several commonalities which are departures from knowledge-based learning, mastery of these skills necessitates deep, intentional engagement and intrinsic, self-directed motivation to learn. By contrast, knowledge-acquisition style learning requires less of an intellectual commitment and can more easily be stimulated by extrinsic motivating factors like grades, charismatic teachers, or parental pressure. These key 21st century skills are also geared much more toward conceptual learning than knowledge learning, this means that mastery of these skills enables the individual to engage with increasingly conceptual challenges and ideas, and not necessarily knowledge based ones.

These emerging realities make it clear that learning environments must change, but the collective direction of that change is still very much undecided. Learning geared toward developing purpose and helping people access meaningfulness, I suggest, best addresses the needs of the emerging future. Meaningfulness, once achieved, is almost by definition a manifestation of intrinsic motivation; *a deep and personal state of being that most fully connects a person with a sense of their wholeness*. Even now, studies suggest that people who access meaningfulness in their work are more curious, inquisitive, challenging, and relentless than the average employee (Garrad 2017, n.p.). Characteristics like these make this set of employees more likely to recover from setbacks and disappointment, create new and useful products and ideas, and they're often tied to a growth and development personal orientation (Garrad, n.p.). The Future of Jobs report only confirms the increasing value of this kind of engagement with work. It's complex problem solving that leads to the game-changing new solution, critical

thinking that rapidly identifies the need for a organizational shift in priorities, and creative thinking that identifies the next new opportunity for the organization. As the world's information universalizes, it'll be those who can draw connections between seemingly disparate ideas, identify and capitalize on previously unseen opportunities, and persevere through complicated problems who will best address the world's needs. As such, our teaching and learning practices today must anticipate and respond to the needs of tomorrow, and those needs are increasingly conceptual in nature. Considering that meaningfulness connects people with a personal sense of wholeness and that purpose is the driving force that facilitates this connection; it's conceptual learning that's the pedagogical approach most likely foster these conditions.

Conceptual Learning

Traditional school structures, like grades and quizzes, are antithetical to the learning needs facing 21st century learners, especially in the areas of deep processing and engaging with complex problems. Consider a conceptual learning task like preparing for a debate; in order to fully prepare, a student must engage with an idea, be open and vulnerable enough to persist through being wrong over and over, and be self-assured enough that their effort is unlikely to ever be rewarded with a definitively 'correct' answer. The later is perhaps the greatest sea change from the knowledge-acquisition learning systems. When memorizing state capitals, rehearsing names of bodily structures, or practicing multiplication tables, students have the benefit of the immediate positive feedback of getting the correct answer; Arkansas will always have a capital and there'll always be a definitively correct answer to a quiz question about it. This kind of learning can be sustained extrinsically by a charismatic teacher and a fair grading system. However, conceptual learning lacks this same tendency, in a traditional school setting it's possible for a student to master the skill of *being a student* and, thus, to achieve good grades without actually improving as a creative thinker or complex problem solver (Lythcott-Haims 2015, n.p.). While that may have been an acceptable outcome in the previous learning paradigm, that kind of learning situation is rapidly becoming ineffectual in the intellectual marketplace.

Schools organized around conceptual learning are likely to be almost unrecognizable compared with today. With the devaluation of rote knowledge acquisition, teaching and learning must pivot such that "Children who have figured out a problem, concept, or idea for themselves can talk about the why and how of the matter rather than the mere fact of its existence, and can

apply what they've learned to new situations" (Lythcott-Haims 2015, n.p.). In an approaching future where a sophisticated AI system diagnoses a sick patient by instantaneously comparing their presented symptoms across a database of millions similar diagnoses, the knowledge of common symptoms becomes much less important for a practicing doctor than the ability to carefully evaluate and then apply the computer-aided diagnosis to a real world human being, crafting a plan together that will maximize the chances of a healthy outcome.

The necessary conditions for developing purpose and accessing meaning are best created by conceptual learning because each processes requires deep processing and reflection. Deep processing leads to more meaningful learning outcomes because understandings are less partitioned to particular domains and can apply in many contexts, depending on the learner's personal set of drives and interests. In Physics teaching, for example, students taught in a more conceptual framework were better able to navigate multi-variable experimental conditions and better at solving problems they hadn't previously encountered (Bumbacker 2015, 61). And, it's not just the direct learning outcomes that improve, the process of engaging in conceptual learning fosters a set of indirect benefits that, in many ways, are just as beneficial as the learning outcomes themselves. Conceptual learning requires more "creative and integrative solutions" (Vansteenkiste 2005, 485), necessitating higher order thinking skills like creative and critical thinking, and complex problem solving skills.

One challenge of conceptual learning - around which schools will need to experiment and innovate - is the level authenticity and individualization necessary for effective conceptual instruction. This level of individualization maximizes the benefits of conceptual learning by leading students to higher levels of engagement with the actual in-classroom process of learning (Jang 2016, 687). In a math class for example, even if a student ultimately doesn't use the particular equation being studied that day, when the class is led in more individualized and conceptual way, there's a higher chance the student obtains supplemental benefits like the ability to persist through challenge, to apply creative problem solving, or to make interdisciplinary connections. In this example, a conceptual learning environment might achieve this by giving students options to apply their learning in a variety of ways. For example, creating a business plan, developing a website, or crunching some statistics that will strengthen the argument they're making in an Economics paper for a different class. Perhaps, even the fundamental concept of dividing courses by academic discipline will be transcended in favor of something more

transdisciplinary. Navigating a paradigm shift as profound as the one that's emerging now in education will no doubt require significant experimentation in areas like conceptual learning.

Experimentation in Teaching and Learning

Experimentation in teaching and learning will be a key component of identifying a path forward, fortunately some such experiments are underway now. One example emerging out of the field of positive psychology is the teaching of happiness. A useful case study by Professors Chris Barker and Brian Martin out of the University of Wollongong demonstrates how preparing a course in an area like happiness raises some fundamental questions about the relationship between students and their learning institutions, and more broadly those institutions and their roles in society. For example, in conceiving the course Barker and Martin had to decide whether the purpose of the class was to gain formal knowledge about happiness theory, or was its aim the “achievement of insights and skills through which students can transform themselves and the world around them?” (2009, 8). Furthermore, in the case of the later, can a course that endeavors to help people make themselves into happier people exist within the structures of a traditional university setting? Assessment also became a challenge, as Barker and Martin quickly realized the processes of the course were social, emotional, and intellectual; with students co-constructing meaning and making personal connections that were perhaps unnoticeable by the course instructor. They found the tools for assessment, even non-traditional assessment like presentations and reflection journals, were only able to assess a fraction of what seemed to be happening within the course. Ultimately, they concluded that like any other such process, that they'd stay as close to the ideal course concept as circumstances allowed which necessitated some compromises along the way. Experimentation in this area may seem idealistic, but considering the work in happiness and its close ties to meaningfulness, it may actually necessitate that society finds ways to scale up this kind of learning and make it more widely accessible. “Happiness depends not just on the ‘good life’ but also the meaningful life, which involves using your signature strengths and virtues in the service of something much larger than you are. Happiness has an ethical dimension” (Seligman 2002, 263). Happiness theory is certainly not a focus of traditional schools, but upon examination, it's in many ways in close alignment with the need to help adolescents make meaning from their educational experiences. As such, examining the science and theory of happiness may be one example of a previously

unconsidered teaching and learning topic that makes up a part of the new path forward for schools.

B. The Meaningful Learning Environment

Creating a Meaningfulness Curriculum

In an experiment in teaching and learning of my own, I had the opportunity to put together a curriculum geared toward helping students make meaning of a series of intense learning experiences through active reflection. The following section provides a personal reflective account of putting together that curriculum with the aim of surfacing some of the considerations I navigated, in hopes that it may serve as a guidepost for other educators interested in designing similarly aimed curricula. Each section provides a summary and reflective analysis of one lesson, there are 5 total sections and the corresponding lesson plans provided in Appendices A-E.

Each lesson provides a different pathway of active reflection with the aim of helping students practice active reflection skills, and each has either stated or implied extension steps for future reflective practice. It's worth noting the objectives of the lessons, which are primarily focused on obtaining reflection skills, and are only secondarily concerned with the particular scientific or theoretical content of the lesson. As established in earlier sections, this pattern - the subordination of content in favor of concepts and skills - is characteristic of the kind of teaching and learning necessary to meet the demands of the emerging future and to make learning maximally meaningful. The content of these lessons happens to be centered around the science of happiness, with a particular emphasis on happiness in the later adolescent years. Much of this content and some of the curricular design was inspired by the work of Dan Lerner and Alan Schlechter in their book U-Thrive: How to Success in College and in Life, which makes key findings in the fields of developmental and positive psychology accessible to adolescents by writing in a clear, direct, action-oriented style about the science of happiness.

Anchoring the key objectives of the curriculum around obtaining active reflection skills was a very intentional choice. In application, this curriculum serves as the midpoint of EXPLO at Yale; a three week long, intensive summer learning experience. Students in the summer enrichment program are residential and immersed in an environment that fosters learning, risk-taking and, fundamentally, meaning-making 24 hours per day over the course of the three week

session. They're taking courses in subjects one might find at a liberal arts college; everything from Improvisational Acting to Genetic Engineering to International Human Rights, but learning in a very real-world, student-driven style. That style and the intensity of learning can't be contained by the walls of the classroom and enfuses the full spirit of the place, pushing in to the dining halls, residential spaces, weekend trips, evening activities, and many other student-driven events. The provided curriculum falls at the midpoint of the three week session in the form of a one-day retreat style break from the typical schedule. It serves as a reflective tool to ensure that students have an opportunity to draw connections between the many experience they've already engaged in at the program, and the concepts of happiness, personal fulfilment, and meaningfulness. This process helps them to contextualize and anticipate the remaining experiences yet to come in the second half of the program. There's a considerable body of research that supports the linkage between active reflection and meaningfulness, which is why this curriculum hinges around these skills. Succinctly stated, "Reflection has many facets. For example, reflecting on work enhances its meaning. Reflecting on experiences encourages insight and complex learning. We foster our own growth when we control our learning, so some reflection is best done alone. Reflection is also enhanced, however, when we ponder our learning with others" (Costa 2008, n.p.). It's the collective experience of the educators at EXPLO and this body of research that informs the actual methodology and delivery of the lessons.

The Science of Gratitude (lesson plans provided in Appendix A)

This lesson highlights the simplicity and accessibility of reflection. The lesson focuses on gratitude, a seemingly intuitive concept. However, the scientific angle illuminates gratitude in a new and somewhat unexpected way, by highlighting the connection between gratitude and emotions, even providing an accessible analogy centering on the weight of emotions; "Negative emotions have more "weight" than positive emotions" (Lerner 2017, 24). Students engage in both independent and group reflection in the lesson, with independent reflection taking a primary role in this particular lesson due to the personal nature of gratitude and due to research in this area which suggests significant time for deep and independent reflection is a key component of maximizing meaningfulness for adolescents in particular (Anca 2017, 50). Importantly, the final activity and extension activity push students toward creating a 'Gratitude Journal', a tool for future active reflection. When successful, this lesson helps students access meaningfulness in

their relationships and experiences by viewing them through the lens of gratitude and positive emotions.

Creating Great Relationships: Active Communication (lesson plans provided in Appendix B)

This lesson and the related lesson “Creating Great Relationships: Navigating Conflict” each share a key objective: “Students will be able to assess the effectiveness of their primary communication tendencies” (Appendices B, C). This objective is so important to accessing meaningfulness because the research shows that, for adolescents, nothing is as strong a predictor of personal fulfillment and success as the sense of having positive relationships with others (Lerner 2017, 32) (Doran 2012, n.p.). The lesson posits that communication is the key to cultivating great relationships with others, and thus accessing all these benefits. The teacher-led discussion bridges these two concepts, the science in support of positive relationships and the importance of communication in cultivating and maintaining them. The activities then address communication by adding structures that make it easier for students to assess and analyze their own communication tendencies, giving them an opportunity to use that reflection to consider ways they may want to update or change those tendencies. This lesson brings students closer to meaningfulness by making a case for the importance of positive relationships and giving students a chance to reflect on their own relationships. When successful, this reflection will lead to insights into what ways those relationships may be either enriching or even detracting from their personal fulfillment.

Creating Great Relationships: Navigating Conflict (lesson plans provided in Appendix C)

This lesson, in many ways a subset of the lesson “Creating Great Relationships: Active Communication”, focuses in on navigating conflict and mending unproductive relationships. The lesson focuses on how conflict can surface a whole host of emotions, and how those emotions can impact a person’s ability to respond to conflict productively. Like the “Active Constructive Responding” chart used in the previous lesson, this lesson breaks down a concept typically taught passively through experience and socialization, and teaches it actively by naming the components of addressing conflict systematically. The Prevention and Relationship Enhancement Program (PREP) system used in this lesson helps students assess the key components of conflict - escalation, invalidation, negative interpretation, and withdrawal - and

gives them a set of solutions that can be helpful in addressing and navigating the conflict, rather than avoiding or exacerbating it (Lerner 2017, 47). When successful, this lesson fosters meaningfulness by helping students cultivate positive, beneficial relationships.

Volunteering and Working for the Common Good (lesson plans provided in Appendix D)

This lesson focuses on the benefits of engaging consciously while being in service of others. It's an all-to-common trope in many high schools that students need to engage in a set number of hours of community service, typically in order to graduate, gain admission into an honor society, or strengthen a college application. Unfortunately, the facilitators of these experiences all too often cannot articulate the reasons for engaging in service, beyond these very transactional ones. This has the effect of portraying service to others as just another box to check off, placing it in the same category, in many students' minds, as the SAT exam or memorizing a long list vocabulary words. This lesson challenges students to consider the concepts of kindness and altruism, and provides some of the psychological underpinnings of concepts like empathy and compassion. Particularly, the lesson addresses this tendency toward service being transactional when done in traditional school settings, and pushes students to explore the limits of this mindset. It also acknowledges that people stand to gain many personal benefits while being in service of others, including increases in gratitude and happiness. The impacts of this lesson on meaningfulness are plentiful and include helping students contextualize the ways that helping other can also bring them closer to personal fulfillment and meaningfulness.

Finding and Applying Signature Strengths (lesson plans provided in Appendix E)

This lesson helps students to reflect on their own tendencies through the lens of 'signature strengths', with the aim of considering how they might harness those strengths in developing purpose and moving closer to meaningfulness. The VIA Institute on Character hosts a well researched survey, the Character Strengths Test, which reflects back to the test taker those strengths which manifest in them most naturally, and those strengths which require the most effort for a person to access (ie: which are the least natural to them). The lesson introduces Csikszentmihalyi's concept of flow as a way of helping students consider meaningfulness in their own lives, particularly through the lens of assessing what gives them purpose or even brings them closer to a Csikszentmihalyian flow state. The lesson is a backdrop for a larger discussion

about the development of purpose by asking students to consider how the ways they are (or could in the future) leverage their skills and tendencies for maximum effect. The lesson brings students closer to meaningfulness by giving them an operational vocabulary for a conversation that, at its core, articulates the roles of skills, purpose, and meaningfulness in their own lives, even if not necessarily in those words.

CONCLUSION

The benefits of accessing meaningfulness are extensive and a key component of what helps people to feel personally fulfilled and maximally effective in the pursuits of their lives. Especially for adolescents, learning experiences that are informed by and aimed toward helping students access meaningfulness in their own lives are key. The most reliable way for institutions of teaching and learning to systematically move students toward meaningfulness is by harnessing the power of purpose, helping students to develop and cultivate purpose in as many learning contexts as possible. A clearly developed and articulated purpose can serve as an anchor point in a person's life, helping them navigate the big (career, major life choices) and small (which book to read next). This is all resting in the confidence that comes from knowing that even if the particulars of an unfolding life are unclear, that pursuing one's purpose wholeheartedly is the best way to consistently realize the fulfillment and wholeness characteristic of accessing one's meaningfulness.

A. Limitations and Areas for Future Work

The limitations to this approach come in practical application. As Bronk's research suggests, there's certainly an appetite for talking with teens about purpose and meaning, "I've spoken with hundreds of high school principals, and every one of them says this is really important. Yet so many say they don't have time to think about this in school" (Suttie, n.p.). Bronk's counter is a non-zero-sum argument, which I would echo, "If the research says that knowing what you want to accomplish in life makes you more motivated in school and helps teachers be more effective in the classroom, then that can make a case for taking the time for it" (Suttie, n.p.). Work with purpose and meaning can have a sidecar feeling, that is, it can feel intuitively like a nice, but somewhat lofty add-on to a traditional education focused on acquiring content knowledge. The works of Brown and Sahlberg, referenced throughout this capstone project, do much to illuminate why adolescent education takes such a content-driven approach which is only glancingly touched on in this capstone project. Educators persuaded by the ideas of this paper should consider future work that builds the non-zero-sum case for making purpose and meaning core parts of adolescent education. Perhaps starting with Bronk's idea that a clearly developed purpose is actually a catalyst for deeper engagement with content, specifically

exploring the underpinnings of the claim that establishing purpose will make a students better at acquiring content knowledge.

An additional area for future work is in the application of the ideas in this capstone project to content-driven courses. Part II, section B and the Appendices sections discuss a curriculum built around the skills of reflection, and does some work in advancing the application of purpose and meaning in the particular context of an immersive three-week learning experience. But, future work that explores application of this kind of teaching and learning in a more traditional classroom setting would be very useful. The Bumbacher research related to the teaching of Physics may be a useful starting point in this endeavor, as it details experimentation with the structure of a Physics course and how that might impact both content and how that content finds context within a student's broader pursuits in learning. That said, the Bumbacher work was not undertaken directly with the aim of developing purpose, and little existing research does pursue the implications of the dual pursuit of purpose development and content. Thus, future work in this area could be in the form of research or curriculum development, and would take the contemporary, traditional school structure as its starting point, perhaps investigating purpose development in the Social Studies, English, or Mathematics classrooms.

B. CCT and EXPLO

The Critical and Creative Thinking program anchors its courses, structure, and content quite literally to its name. This is both its greatest strength and the key reason why my work in the program led to insights so tailored to my professional and personal pursuits. Like the style of learning which I advocate in this capstone project, the CCT program advances thinking skills primarily, and specific content secondarily. In my own practice, this meant that nearly all the major projects throughout the program were an expression of the particular thinking skills being advanced in the class (ex. *Mathematical Thinking*, *Dialogue Process*, *Holistic and Transformative Teaching*), but with the application of my choice. This gave me the leeway to choose to apply the perspectives gained from the courses to my work with EXPLO. This cycle of enhanced perspective and its application became, of itself, a process of meta-cognitive reflection on a three year time scale, often pushing me to question the foundations of my thinking related to my professional work. This was the most beneficial aspect to undertaking the CCT program simultaneously to full time work in Education. I was able to observe the above mentioned cycle

actually responding to my updated thinking, as I advanced through the program. The evolution of this capstone project is perhaps the clearest manifestation of the benefits of this cycle; yielding projects like *Improving the Quality of Conversation Among School Administrators*, *How Helping Adolescents Make Meaning from their Learning Sets Them on a Path of Purpose*, and *Deciding Who You Might Be*. Each course enacted an evolution in my thinking that led, ultimately, to the perspectives expressed in this capstone project. The advantage of having a school to which I was able to apply this thinking cannot be understated either; from designing and carrying out a professional development workshop in productive dialogue to updating how I teach people to think about their end-of-session feedback sessions, the process of real time application was the other half of a very beneficial symbiotic relationship.

REFERENCES

- Abel, J. R. & Deitz, R. (2013). Do big cities help college graduates find better jobs? Federal Reserve Bank of New York. Retrieved from: <http://libertystreeteconomics.newyorkfed.org/2013/05/do-big-cities-help-college-graduates-find-better-jobs.html#.Vz9xEKODGkp> (viewed: 6 May 2018).
- Anca, M. & Bocos, M. (2017). The Role of Independent Activities in Development of Strategic Learning Competences and Increase of School Performance Level, within the Study of High School Pedagogy. *Educatia*, 21(15), 49-54. Retrieved from: <https://eric.ed.gov/?id=ED580836> (viewed: 25 April 2018).
- Bandura, A. (1977). Self-Efficacy: Toward a Unifying Theory of Behavioral Change. *Psychological Review*, (84)2, 191-215. Retrieved from: <https://www.uky.edu/~eushe2/Bandura/Bandura1977PR.pdf> (viewed: 12 Nov. 2017)
- Barker, C. & Martin, B. (2009). Dilemmas in Teaching Happiness. *Journal of University Teaching and Learning Practice*, 6(2). Retrieved from: <http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1088&context=jutlp> (viewed 23 Oct. 2017).
- Barton, P.E. (2009). National Education Standards: Getting beneath the Surface. Policy Information Perspective. *Education Testing Service*. Retrieved from: <https://files.eric.ed.gov/fulltext/ED507800.pdf> (viewed: 25 April 2018).
- Bearne, S. (2016). How technology has transformed the travel industry. *The Guardian*. Retrieved from: <https://www.theguardian.com/media-network/2016/feb/29/technology-internet-transformed-travel-industry-airbnb> (viewed: 2 March 2018).
- Benard, B. (1991). Fostering resiliency in kids: Protective factors in the family, school and community. *San Francisco, CA: Western Regional Center for Drug Free Schools and Communities*. Far West Laboratory. Retrieved from: https://www.wested.org/wp-content/files_mf/1373568312resource93.pdf (viewed: 25 April 2018).
- Berger, G. (2016). Will This Year's College Grads Job-Hop More Than Previous Grads? *LinkedIn Official Blog*. Retrieved from: https://blog.linkedin.com/2016/04/12/will-this-year_s-college-grads-job-hop-more-than-previous-grads (viewed: 27 April 2018).

- Berridge, K.C. & Kringlebach, M. L. (2016). Pleasure systems in the brain. *Neuron*, 86(3), 646-664. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4425246/> (viewed: 2 March 2018).
- Blackwell, L., Trzesniewski, K., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, 78, 246–263. Retrieved from: <http://mtoliveboe.org/cmsAdmin/uploads/blackwell-theories-of-intelligence-child-dev-2007.pdf> (viewed: 25 April 2018).
- Bronk, K. C., Finch, W. H., & Talib, T. (2010). The prevalence of a purpose in life among high ability adolescents. *High Ability Studies*, 21(2), 133-145. Retrieved from: https://coa.stanford.edu/sites/default/files/CHAS_A_5253391.pdf (viewed: 13 April 2018).
- Brown, B. (2012). *Daring Greatly: How the Courage to Be Vulnerable Transforms the Way We Live, Love, Parent, and Lead*. New York, NY: Avery.
- Bumbacker, E., Salehi, S., Wiezchula, M., & Blikstein, P. (2015). Learning Environments and Inquiry Behaviors in Science Inquiry Learning: How their Interplay Affects the Development of Conceptual Understanding in Physics. *Proceedings of the 8th International Conference on Educational Data Mining*. Retrieved from: <https://files.eric.ed.gov/fulltext/ED560526.pdf> (viewed: 25 April 2018).
- Campbell, J. & Moyers, B. (1991). *The Power of Myth*. New York, NY: Anchor. Retrieved from: <http://www.sjsu.edu/people/joan.mcmillan/courses/1A2013/s3/ThePowerOfMyth.pdf> (viewed: 6 May 2018).
- deCharms, R. (1968). *Personal causation: The internal affective determinants of behavior*. New York: Academic Press. Retrieved from: <http://pubs.sciepub.com/ajap/5/1/2/index.html> (viewed: 16 Oct. 2017)
- Coleman, J. (2017). You Don't Find Purpose - You Build It. *Harvard Business Review*. Retrieved from: <https://hbr.org/2017/10/you-dont-find-your-purpose-you-build-it?> (viewed: 6 May 2018)
- Coles, P., Cox, T., Mackey, C. & Richardson, S. (2006). The Toxic Terrabyte: How Data-Dumping Threatens Business Efficiency. *IBM Global Technology Services*. Retrieved from: <https://www->

- 935.ibm.com/services/no/cio/leverage/levinfo_wp_gts_thetoxic.pdf (viewed: 6 May 2018)
- Costa, A. L. & Kallick, B. (2008). Chapter 12. Learning Through Reflection. In A. L. Costa & B. Kallick (Eds.), *Learning and Leading with Habits of Mind*. Retrieved from: <http://www.ascd.org/publications/books/108008/chapters/Learning-Through-Reflection.aspx> (viewed: 5 April 2018)
- Csikszentmihalyi, M. (2004). Flow, the Secret to Happiness. *TED: Ideas Worth Spreading*. Retrieved from: https://www.ted.com/talks/mihaly_csikszentmihalyi_on_flow (viewed: 6 May 2018)
- Davidai, S. & Gilovich, T. (2016). The headwinds/tailwinds asymmetry: An availability bias in assessments of barriers and blessings. *Journal of Personality and Social Psychology*, 111(6), 835-851. Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/27869473> (viewed: 6 May 2018)
- Doran, L. (2012). Saving the World Vs. Kissing the Girl. *TEDx Talks*. Retrieved from: <https://www.youtube.com/watch?v=752INSLlyf0> (viewed: 11 Feb. 2018)
- Feldman, G., Greeson, J., & Senville, J. (2010). Differential effects of mindful breathing, progressive muscle relaxation, and loving-kindness meditation on decentering and negative reactions to repetitive thoughts". *Behavioral Research and Therapy*, 48(10),1002-11. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S0005796710001324> (viewed: 6 May 2018)
- The Future of Jobs. (2016). *The World Economic Forum*. Retrieved from: <https://www.weforum.org/reports/the-future-of-jobs> (viewed: 24 Oct 2017)
- French, S., & Joseph, S. (1999). Religiosity and it's Association with Happiness, Purpose in Life, and Self-Actualization. *Mental Health, Religion, & Culture*, 2(2), 117-120. Retrieved from: <http://psycnet.apa.org/record/2000-03596-001> (viewed: 13 Jan. 2018)
- Garrad, L. & Chamorro-Premuzic, T. (2017). How to Make Work More Meaningful for Your Team. *Harvard Business Review*. Retrieved from: <https://hbr.org/2017/08/how-to-make-work-more-meaningful-for-your-team> (viewed: 6 May 2018)
- Greenleaf, R.K. (2003). Motion and Emotion. *Principal Leadership*, 3(9), 14-9.

- Hagenauer, G. & Hascher, T. (2014). Early Adolescents' Enjoyment Experienced in Learning Situations at School and Its Relation to Student Achievement. *Journal of Education and Training Studies*, 2(2). Retrieved from: <https://pdfs.semanticscholar.org/06ca/be1aa8c8cc5256443f3afc498d80a059fbf7.pdf> (viewed: 5 Sept. 2017)
- The Imperative Story. Retrieved from: <https://imperative.com/our-story-2/> (viewed: 6 May 2018)
- Introduction to Psychology. (2015). *University of Minnesota Libraries Publishing edition, 2015*. Retrieved from: <http://open.lib.umn.edu/intropsyc/chapter/6-3-adolescence-developing-independence-and-identity/> (viewed: 6 May 2018)
- Jang, H., Reeve, J., & Halusic, M. (2016). A New Autonomy-Supportive Way of Teaching That Increases Conceptual Learning: Teaching in Students' Preferred Ways. *The Journal of Experimental Education*, 84(4), 686-701. Retrieved from: <https://eric.ed.gov/?id=EJ1107939> (viewed: 6 May 2018)
- Keyes, C. L. M., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82, 1007-1022. Retrieved from: <http://aging.wisc.edu/pdfs/871.pdf> (viewed: 13 March 2018)
- King, G. (2011). Ensuring the Data-Rich Future of the Social Sciences. *Science*, 331(6018), 719-721. Retrieved from: <http://science.sciencemag.org/content/331/6018/719> (viewed: 22 April 2018)
- King, L. A., Hicks, J. A., & Krull, J., & Del Gaiso, A. K. (2006). Positive affect and the experience of meaning in life. *Journal of Personality and Social Psychology*, 90, 179-196. Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/16448317> (viewed: 6 May 2018)
- Lerner, D. & Schlechter, A. (2017). *U-Thrive: How to Succeed in College (and Life)*. New York, NY: *Little, Brown and Company*.
- Lobdell, T. (2011). Driven to succeed: How we're depriving teens of a sense of purpose. *Palo Alto Weekly*. Retrieved from: <https://ed.stanford.edu/news/driven-succeed-how-were-depriving-teens-sense-purpose> (viewed: 3 May 2018)
- Lohr, S. (2017). A.I. Is Doing Legal Work. But It Won't Replace Lawyers, Yet. *The New York Times*. Retrieved from: <https://www.nytimes.com/2017/03/19/technology/lawyers-artificial-intelligence.html> (viewed: 30 Jan. 2018)

- Lythcott-Haims, J. (2015). *How to Raise an Adult: Break Free of the Overparenting Trap and Prepare Your Kid for Success*. New York, NY: *Henry Holt and Co.*
- Lyumbomirsky, S. & Sheldon, K. (2012). Achieving sustainable new happiness: Prospects, Practices, Prescriptions. In A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 127-145). Hoboken, NJ: John Wiley & Sons. Retrieved from: https://www.researchgate.net/publication/286067420_Achieving_Sustainable_New_Happiness_Prospects_Practices_and_Prescriptions (viewed: 3 May 2018)
- Mackay, D.G., Shafto, M., Taylor, J.K., Marian, D.E., Abrams, L. & Dyer, J.R. (2004). Relations between emotion, memory, and attention: Evidence from taboo Stroop, lexical decision, and immediate memory tasks. *Memory & Cognition*, 32(3), 474-488. Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/15285130> (viewed: 3 May 2018)
- Masten, A. S., & Reed, M. G. J. (2002). Resilience in development. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology*, 74-88, New York, NY: Oxford University Press. Retrieved from: <http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780195187243.001.0001/oxfordhb-9780195187243-e-012> (viewed: 22 March 2018)
- McIntyre, C.K. & Roozendaal, B. (2007). Chapter 13. Adrenal Stress Hormones and Enhanced Memory for Emotionally Arousing Experiences. In F. Bermúdez-Rattoni (Ed.), *Neural Plasticity and Memory: From Genes to Brain Imaging*, Boca Raton, FL: CRC Press/Taylor & Francis. Retrieved from: <https://www.ncbi.nlm.nih.gov/books/NBK3907/> (viewed: 22 Feb. 2018)
- Mead, R. (2017). Success Academy's Radical Educational Experiment. *The New Yorker*. Retrieved from: <https://www.newyorker.com/magazine/2017/12/11/success-academys-radical-educational-experiment> (viewed: 6 May 2018)
- Orlin, B. (2013). When Memorization Gets in the Way of Learning. *The Atlantic*. Retrieved from: <https://www.theatlantic.com/education/archive/2013/09/when-memorization-gets-in-the-way-of-learning/279425/> (viewed: 2 May 2018)
- Purpose at Work. (2016). *2016 Global Report, Imperative*. Retrieved from: https://cdn.imperative.com/media/public/Global_Purpose_Index_2016.pdf (viewed: 6 May 2018)

- Quas, J. A., (2014). Adolescence: A unique period of challenge and opportunity for positive development. *American Psychological Association*. Retrieved from: <http://www.apa.org/pi/families/resources/newsletter/2014/12/adolescence-development.aspx> (viewed: 6 May 2018)
- Roaten, G. K. & Roaten, D. J. (2012). Adolescent Brain Development: Current Research and the Impact on Secondary School Counseling Programs. *Journal of School Counseling*, 10(18). Retrieved from: <https://eric.ed.gov/?id=EJ981198> (viewed: 22 Nov. 2018)
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69, 719-727. Retrieved from: <http://midus.wisc.edu/findings/pdfs/830.pdf> (viewed: 6 May 2018)
- Sahlberg, P. (2015). *Finnish Lessons 2.0: What Can the World Learn from Educational Change in Finland?* Second Edition. New York, NY: *Teachers College Press*.
- Schilling, D. R. (2013). Knowledge Doubling Every 12 Months, Soon to be Every 12 Hours. *Industry Tap*. Retrieved from: <http://www.industrytap.com/knowledge-doubling-every-12-months-soon-to-be-every-12-hours/3950> (viewed: 24 Oct. 2017)
- Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York, NY: *Free Press*.
- Shavel, M., Vanderzeil, S. & Currier, E. (2017). Retail Automation: Stranded Workers? Opportunities and Risks for Labor and Automation. *Cornorstone Capital Group*. Retrieved from: <https://cornerstonecapinc.com/2017/05/retail-automation-stranded-workers-opportunities-and-risks-for-labor-and-automation/> (viewed: 3 May 2018)
- Siddiqui, S. V., Chatterjee, U., Kumar, D., Siddiqui, A., & Goyal, N. (2008). Neuropsychology of prefrontal cortex. *Indian Journal of Psychiatry*, 50(3), 202-08. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2738354/?report=printable>. (Viewed 6 May 2018).
- Steinberg, L. (2011). Demystifying the Adolescent Brain. *Educational Leadership*, 68(7), 42-6. Retrieved from: <https://www.mendhamboro.org/cms/lib02/NJ01000391/Centricity/Domain/127/Demystifying%20the%20adolescent%20brain.pdf> (viewed: 25 April 2018)

- Taki, Y. & Kawashima, R. (2012). Brain Development in Childhood. *Open Neuroimag*, 6: 103-110. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3499734/> (viewed: 3 May 2018)
- Vansteenkiste, M., Simons, J., Lens, W., Soenens, B. & Matos, L. (2005). Examining the Motivational Impact of Intrinsic Versus Extrinsic Goal Framing and Autonomy-Supportive Versus Internally Controlling Communication Style on Early Adolescents' Academic Achievement. *Child Development*, 76(2), 483-501. Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/15784095> (viewed: 2 Nov. 2018)
- VIA Institute on Character. Retrieved from: <http://www.viacharacter.org/www/> (viewed: 3 May 2018)
- Yurgelun-Todd, D.A., Killgore, W. D. & Young, A. D. (2002). Sex Differences in Cerebral Tissue Volume and Cognitive Performance During Adolescence. *Psychological Reports*, 91(3), 743-57. Retrieved from: <http://journals.sagepub.com/doi/abs/10.2466/pr0.2002.91.3.743> (viewed: 3 May 2018)

APPENDIX A: The Science of Gratitude

The Science of Gratitude	
Essential Question	<ul style="list-style-type: none"> ● How does active reflection help learners make their experiences more meaningful?
Objectives	<ul style="list-style-type: none"> ● Students will be able to identify areas of their life where their expression of gratitude could enrich it. ● Students will be able to explain key concepts from the science of gratitude, in the context of their own experiences.
Context for Instructor	<p>Presentation on the research and scientific backing of the power of positive emotions. Present on ideas like:</p> <ul style="list-style-type: none"> ● Negative emotions have more “weight” than positive emotions, exemplified with Dr. Hi Po Bobo Lau experiment in the “cost” of emotions (Lerner). ● Research around positive emotions’ priming effect on performance, how positive emotions when learning lead to better retention, athletic performance. ● The concept of headwinds / tailwinds from Davidai & Gilovich in this research. <ul style="list-style-type: none"> ○ <i>“The flip side of this toxic stew of resentment, envy, and entitlement is gratitude, and the headwind/tailwind asymmetry can also help explain why people can have a hard time getting in touch—or staying in touch—with all there is to be grateful for. Feeling grateful makes people happier, healthier, more appreciative of their romantic partners, and kinder to others. Given all of these powerful psychological benefits, it can seem surprising that people have such a hard time summoning this positive, productive emotion. An understanding of how easy it is for people to get in touch with their headwinds and how hard it is to fully appreciate their tailwinds can help explain why a consistent connection to gratitude can be so elusive. It can also help explain why people often lack sufficient compassion for others who have been faced with their burdens and barriers to success. The salience of their own headwinds can make it hard to see the burdens experienced by others.</i> (Davidai 2016, 837)

	<ul style="list-style-type: none"> ○ <i>“people tend to ignore or downplay the role that their social connections have played in their success”</i> (Davidai 2016, 847)
Readings for Instructor	<ul style="list-style-type: none"> ● “Positive Emotions: The Science of Happiness”, Chapter 1 of U-Thrive by Dan Lerner and Alan Schlechter, MD ● Davidai & Gilovich work on Headwinds + Tailwinds; the paper intro and “Gratitude and Resentment”, pp. 847-8.
Activities	
Discussion (10)	<ol style="list-style-type: none"> 1. Instructor introduces The Science of Gratitude concept based on Mini-Lesson Concepts and reading. 2. Instructor should focus on providing an overview of the concept; with a specific focus on how/why they connected with it and what stuck out to them from having done some reading and thinking about the topic in preparation from today’s session.
Statements of Gratitude (30)	<ol style="list-style-type: none"> 1. Write Statements of Gratitude <ol style="list-style-type: none"> a. Students write statements of gratitude (15 minutes) b. Students are asked to share gratitude statements; either with a partner or with the large group (15 minutes)
Group Reflection (15)	<ol style="list-style-type: none"> 1. Instructor prompts students to reflect personally and then collectively on the process of writing gratitude statements, also on how it feels to share them publicly, and how they think it might feel to share them with the person toward whom they feel the gratitude. Challenge the students to actually share their gratitude statements with the person toward whom they feel gratitude after the session.
Gratitude Journal (5)	<ol style="list-style-type: none"> 1. Independently, students start a gratitude journal <ol style="list-style-type: none"> a. Close the session by simply introducing the idea of a gratitude journal. Discuss, for example, how making a regular commitment that they feel they can meet is a part of what makes the journal work well. They could consider daily, weekly, or monthly entries. And, entry lengths of just a few words or sentences if they prefer, or full journal-style entries.

	b. Give students a few minutes to start work on a first entry.
Extension: Letter of Gratitude	<ol style="list-style-type: none">1. Write a letter of gratitude to someone, and then bring it to them in person to share and discuss it with them2. <i>Instructor Note:</i> This is a good alternative activity, especially if there are student who'd rather work with this concept more independently. Or, for student who are eager to do more on their own, after the session.

APPENDIX B: Creating Great Relationships: Active Communication

Creating Great Relationships: Active Communication	
Essential Question	<ul style="list-style-type: none"> ● How does active reflection help learners make their experiences more meaningful?
Objectives	<ul style="list-style-type: none"> ● Students will be able to assess the effectiveness of their primary communication tendencies. ● Students will be able to explain how active communication may enrich their future relationships.
Context for Instructor	<ul style="list-style-type: none"> ● Concept that there's no better indicator of your happiness and success in college than the quality of your relationships. ● Sharing positive emotions within a relationship is the best way to receive positive emotions (Doran 2012, n.p.) ● Having positive relationships in a positive predictor of engagement with one's work, is related to higher well-being, and even makes a person less likely to be injured. Also related to a higher GPA, lower rates of depression, and healthier responses to stressful situations ● The top 10th percentile of happiest people are mostly likely to report being in positive relationships. ● Friends significantly influence one another; mood, habits, health, and even traits like creativity.
Readings for Instructor	<ul style="list-style-type: none"> ● "Relationships: Getting Connected", Chapter 2 of U-Thrive by Dan Lerner and Alan Schlechter, MD ● TED Talk: Lindsay Doran "Saving the World vs. Kissing the Girl"
Activities	
Discussion (10)	<ul style="list-style-type: none"> ● Instructor introduces Active Communication concepts based on "Mini-Lesson Concepts" section above and the suggested reading. ● Instructor should focus on providing an overview of the concept; with a specific

	<p>focus on how/why they connected with it and what stuck out to them from having done some reading and thinking about the topic in preparation from today’s session.</p>
<p>Active Constructive Responding (10)</p>	<ul style="list-style-type: none"> ● Chart Found in U-Thrive, Chapter 2, Section “Building Your Positives” (Lerner 2017, 46). ● Introduce ACR table and explain how it works ● Teacher has 2-3 practice statements and the group practices coming up with responses from one of the selected areas of the ACR chart.
<p>Using ACR (20)</p>	<ul style="list-style-type: none"> ● Break into partners or small groups ● Students reflect on times they’ve been a part of an interaction that didn’t go well. They reevaluate the situation to analyze if ACR would have helped, and when they identify an area where it would help, they write active, constructive response.
<p>Reflection on Using ACR (20)</p>	<ul style="list-style-type: none"> ● In a group discussion, student reflect on the ACR process and how it helps them rethink conflict situations from their lives. ● Student can share some of the situations they surfaced during the “Using ACR” activity
<p>Extension Activity: Role Play</p>	<ul style="list-style-type: none"> ● Role Playing Active Communication ● As an alternative activity, instructor may opt to replace activities 3 and 4 with role plays of situations raised by students, that the group them analyzes together using the ACR chart as a guide.

APPENDIX C: Creating Great Relationships: Navigating Conflict

Creating Great Relationships: Navigating Conflict	
Essential Question	<ul style="list-style-type: none"> • How does active reflection help learners make their experiences more meaningful?
Objectives	<ul style="list-style-type: none"> • Students will be able to assess the effectiveness of their primary communication tendencies. • Students will be able to articulate the ways conflict can be addressed productively.
Context for Instructor	<ul style="list-style-type: none"> • Concept that there's no better indicator of your happiness and success in college than the quality of your relationships. • Having positive relationships in a positive predictor of engagement with one's work, is related to higher well-being, and even makes a person less likely to be injured. Also related to a higher GPA, lower rates of depression, and healthier responses to stressful situations • The top 10th percentile of happiest people are mostly likely to report being in positive relationships. • Friends significantly influence one another; mood, habits, health, and even traits like creativity.
Readings for Instructor	<ul style="list-style-type: none"> • "Relationships: Getting Connected", Chapter 2 of U-Thrive by Dan Lerner and Alan Schlechter, MD
Activities	
Discussion (10)	<p><i>Activity around U-Thrive Activity "PREPare (Not) to Do Battle"</i></p> <ol style="list-style-type: none"> 1. Instructor introduces Navigating Conflict concepts based on "Mini-Lesson Concepts" section above and the suggested reading. 2. Instructor should focus on providing an overview of the concept; with a specific focus on how/why they connected with it and what stuck out to them from having done some reading and thinking about the topic in preparation from today's session.

<p>PREP Warning Signs (5)</p>	<ol style="list-style-type: none"> 1. Signs and explanations listed in U-Thrive, Chapter 2, Section “Friendships Worth Fighting For” 2. Instructor introduces the four PREP warning signs and how the “PREP” system can help people navigate conflict situations
<p>Warning Signs in Action (20)</p>	<ol style="list-style-type: none"> 1. Independently, students reflect on the warning signs. Where have they perhaps seen them in friends or family? Can they identify them in themselves? <ol style="list-style-type: none"> a. Ex: “Sometimes when I am in conflict with my friend group at school, I think we’re all sometimes a little guilty of ‘invalidation’ because we can sometimes get into the habit of ignoring each other when we’re in an argument. For example, If I’m mad at a certain person, I they might say something in a group setting and I would just roll my eyes or try to change the subject right away”. 2. In partners or small group, students think together about some of the warning signs and work together on writing down solutions. <ol style="list-style-type: none"> a. Ex: “I think that my friend group would spend less time being angry at each other if instead of our “invalidation” habit, we were better at talking about what’s making us mad. I think one way we could do that might be to make everyone verbalize an “I statement” about the situation, like “I am feeling unheard because...”. Personally, my biggest warning flag of when I might be guilty of doing invalidation is if I am rolling my eyes when someone talks, I know I am sometimes guilty of this”.
<p>Group Reflection + Role Play (25)</p>	<ol style="list-style-type: none"> 1. In the larger group, student share highlights from their list, warning sign and solution. They should describe their thinking as it pertains to how they arrived at the solution. 2. Instructor asks for volunteers from the group to role play the situation and it’s solution 3. After each role play, instructor should facilitate some reaction and reflection from students before moving on to the next role play. <ol style="list-style-type: none"> a. Ex: What did folks think about how Jenny responded to what Joe said?

	<p>b. Ex: Have you ever encountered a situation like this in your own life, if so did you handle it similarly, differently?</p>
--	---

APPENDIX D: Volunteering and Working for the Common Good

Volunteering and Working for the Common Good	
Essential Question	<ul style="list-style-type: none"> ● How does active reflection help learners make their experiences more meaningful?
Objectives	<ul style="list-style-type: none"> ● Students will be able to explain the benefits of service-oriented work. ● Students will be able to articulate the benefits of service-oriented work that also has a reflective component.
Context for Instructor	<ul style="list-style-type: none"> ● Consciously identifying ways to expend effort for the benefit of others is a powerful win-win. First, doing so simply helps meet the community’s needs. But, secondly, because the person who consciously expends effort in service of others personally benefits too; by increasing their own gratitude increasing their “set point of happiness” ● “Individuals who report a greater interest in helping others, an inclination to act in a prosocial manner, or intentions to perform altruistic or courteous behaviors are more likely to rate themselves as dispositionally happy” (Lyubomirsky 2012, 12) ● Lyubomirsky research shows that people who perform one large or 5 smaller acts of act of conscious kindness throughout just one day benefit from a personal boost in happiness that can last for months afterward
Readings for Instructor	<ul style="list-style-type: none"> ● Michelle Borba, Ed.D’s work in empathy ● Yale Psychology Professor Paul Bloom’s research around empathy vs. compassion
Activities	
Discussion (10)	<p><i>Based on “Consciously Kind” Activity, Chapter 1 U-Thrive</i></p> <ol style="list-style-type: none"> 1. Instructor introduces Navigating Conflict concepts based on “Mini-Lesson Concepts” section above and the suggested reading. 2. Instructor should focus on providing an overview of the concept; with a specific focus on how/why they connected with it and what stuck out to them from having done some reading and thinking about the topic in preparation from today’s session.

<p>Discussion: Conscious Acts of Kindness (30)</p>	<ol style="list-style-type: none"> 1. Instructor prompts a discussion around the merits of conscious acts of kindness and what differentiates from unintentional acts of kindness (like holding the door open for someone). Possible avenues for discussion: <ol style="list-style-type: none"> a. Is one kind of kindness better than the other? b. Why do students think conscious acts of kindness have the scientifically measurable connection with a boost in personal happiness, where that same connection doesn't exist for unintentional/incidental acts of kindness. c. What do they make of anonymous acts of kindness? d. What do they think of as differences between giving someone else their time and effort (ie: volunteering to tutor a child) compared with giving resources (ie: making a donation to a school). Specifically, do they imagine this impacts happiness? Is one of these better than the other?
<p>Your Personal Kindness Experiment (20)</p>	<ol style="list-style-type: none"> 1. In this activity, students will make a plan to conduct a personal kindness experiment to assess the effects on their personal happiness when engaging in conscious acts of kindness. 2. Instructor prompts students to identify an objective measurement of their personal happiness (perhaps a simple 1-10 rating system, or by tracking the number of times they smile in a day, etc.). Students will use this as a baseline. 3. Students then devise one large or several small acts of conscious kindness to carry out at EXPLO in the next couple of days, with the aim of tracking how carrying those acts out impacts their baseline happiness as established in 3b. 4. Students may work independently or in small groups to establish this plan.
<p><i>Extension Activity: Follow-Up</i></p>	<ol style="list-style-type: none"> 1. Instructor should give kids some way to sharing their results with you or one another. Perhaps invite them to come find you and report, or encourage them to buddy up and compare their results, or even to work together in carrying out the acts of kindness.

APPENDIX E: Finding and Applying Signature Strengths

Finding and Applying Signature Strengths	
Essential Question	<ul style="list-style-type: none"> ● How does active reflection help learners make their experiences more meaningful?
Objectives	<ul style="list-style-type: none"> ● Students will be able to identify the manifestation of at least one key strengths in their learning experiences. ● Students will be able to interpret another person’s actions and personality using key strengths.
Context for Instructor	<ul style="list-style-type: none"> ● “The engaged life emerges when we are using our strengths and talents to meet challenges. challenges. Learning something new, demonstrating bravery in word or deed, working closely with others, appreciating something of great beauty, and simply being kind are just a few pathways. When we are engaged with our highest strengths and talents, it even has its own term: flow.” (Lerner 2017, 57). <ul style="list-style-type: none"> ○ “when we are using our highest strengths and talents and the level of challenge meets the level of our skill” (Lerner 2017, 57). ● Benefits of engagement are foundational for success in college and in life; they include increased concentration, higher motivation to learn, sense of authenticity, increased happiness ● Engagement and flow are the product of an informed application of one’s strengths, thus the VIA strengths inventory
Readings for Instructor	<ul style="list-style-type: none"> ● U-Thrive Chapter 3 ● Csikszentmihalyi - Flow ● Martin Seligman
Activities	
Discussion (10)	<p><i>Instructor introduces Navigating Conflict concepts based on “Mini-Lesson Concepts” section above and the suggested reading.</i></p> <ol style="list-style-type: none"> 1. Instructor should focus on providing an overview of the concept; with a specific

	<p>focus on how/why they connected with it and what stuck out to them from having done some reading and thinking about the topic in preparation from today’s session.</p> <p>2. Be sure to include the idea that engagement and flow are the product of an informed application of one’s strengths</p>
<p>Your Best Self (20)</p>	<p><i>Students will have completed the VIA Strengths Finder Survey ahead of class</i></p> <p>1. Instructor provides the prompt; “Take ten minutes and write about a time when you were either at your very best or at your most resilient in the face of challenge. Explore the experience in great detail, making a point to focus on: where you were; whom you were with; what you were proudest of, both in the process and in the outcome; and how your strength played a role” (Lerner 2017, 70). Prompt from U-Thrive activity “Never Stop Exploring”, chapter 3</p> <p>2. Instructor then prompts students to break into pairs or small groups and share what they generating from writing about their best selves.</p>
<p>Discussion of Key Strengths (20)</p>	<p>1. Instructor prompts discussion around students’ reactions and ideas related to key strengths. Possible avenues for discussion:</p> <ul style="list-style-type: none"> a. Did the ranking surprise you? Especially with a focus on what key strengths (top 5 strengths) surprised you? b. With knowledge of key strengths from VIA inventory, does the “Your Best Self” imagine make more sense? c. Do you think your friends/family would agree with your key strengths? Why? d. How might one go about applying their specific key strengths? <ul style="list-style-type: none"> i. A person with humor, creativity, perspective, and judgement might be a good teacher, where a different arrangement of similar strengths might make them a better lawyer; ex: fairness, perspective, judgement, honesty
<p>Application of Key Strengths (10)</p>	<p>1. Distribute handout with Csikszentmihalyi’s flow chart, and point out how the application of key strengths is how people find a flow state in their work, personal lives, and other pursuits.</p> <p>2. Instructor prompts students to independently reflect on the session and write about</p>

the application their key strengths.

3. Optionally, student can share their free write with the instructor or choose to keep it private