FORESIGHT FOR EVERY KID

The Potential Impacts of Futures Education for
Socioeconomically Disadvantaged Children: A Cross-Disciplinary Inquiry

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Abstract

While poverty has proven to negatively impact both cognitive development and overall academic success for K-12 students in Canada and the US, current scholastic outcomes indicate that our education systems continue to fail to fully meet the needs of our most socioeconomically disadvantaged students. *Foresight for Every Kid* builds upon evidence that students' success in schools is in part reliant on their valuing the future, and that relationships to the future can be associated with socioeconomic status. Following an introduction to futures studies, there follows an analysis of overlaps between existing research on the impacts of poverty, contemporary teaching strategies for socioeconomically disadvantaged learners, neuroplasticity, and time perspective theory. The project then highlights the potential in futures studies to leverage further change in our school systems, specifically to grow the 'future orientation' of socioeconomically disadvantaged students in order to promote academic success. To that end, two 'futurized' tools for educators are introduced: a futurized educator profile, and a futurized teaching process framework.

Acknowledgments + Dedication

For over a decade I have had the tremendous privilege of working with hundreds of adolescent students, and the inspiration and motivation for this project came directly from them.

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There are many people to whom I owe thanks for their support and encouragement in helping me achieve my personal goal of completing this project.

My primary project advisor, Suzanne Stein, was incredible in her generosity throughout the conceptual, research, and writing processes for *Foresight for Every Kid*. Her encouragement, support, and thoughtful questioning buoyed me through what was often an arduous solitary experience. If patience is a virtue, then Suzanne is the most virtuous person I've met in a long time.

My secondary project advisor, Kathleen Gould Lundy, provided the keen insights of an expert K-12 educator that helped guide my process in meaningful and relevant ways. Kathy's classroom presence is unparalleled, and merely conjuring up her inspiring image helped motivate me to pursue my work.

I want to acknowledge and thank Stuart Candy for getting me hooked onto futures studies, and for his ongoing support and encouragement. Working alongside Stuart at Duke TIP in June of 2014 was an incredible privilege, and formed the beginning of my exploration of this project.

My parents and friends, who cheered me on when I took the plunge as a full-time student, offered love and caring throughout that made me feel capable and valued. Laura Dempsey, my closest SFI comrade and friend, was an especially inspiring ally whose life and work ethic pushed me to set the bar higher, and to open my heart wider. The brilliant Ilya Parkins was there to offer advice on the fly, and engage in deeper conversation when I needed new insights.

My wife and co-parent Tammy Tiedeman actively encouraged me to follow my dream of pursuing my graduate degree at OCAD University. She inspired me with her willingness to embrace massive family upheaval and change: we moved five times, renovated a house, had our second child, and withstood other familial trials and tribulations in the two years I was at school. I feel exceptionally grateful and privileged to have had her love and support throughout the process of 'going back to school,' and offer her the same in return should she choose to pursue graduate studies – or any other mysterious and exciting adventure for that matter.

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This project is dedicated to all of the students I have let down, with a promise to try harder.

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Preface

My own struggles with teaching, specifically struggles with meeting the needs of my most systemically disadvantaged students, pushed me to challenge myself to examine and reimagine what it is that I do as an elementary school teacher. This research project forms part of that ongoing personal challenge.

When I began my career in education in 2004, I knew something was wrong. I'd been trained to teach, but wasn't succeeding at reaching many of my students. I was ambitious, motivated, and inspired–and clearly, it wasn't enough. My class of thirty-something 7th and 8th grade inner-city students were more than I could handle. I cried most evenings, partly out of frustration, but also because I felt helpless to improve my students' circumstances, and struggled deeply with much of what I saw. Like many teachers working in socioeconomically disadvantaged communities, my own experiences were not mirrored in what I witnessed at work: I was a middle-class, white, English-speaking teacher working in a poor, multiethnic community.

I read motivational books, and experimented with many different teaching strategies, but the culture of the school continued to elude me. The simplest way to characterize my perception of the prevailing student attitude is this: *it wasn't 'cool' to do well*. Students openly bragged about academic failure, and the few kids who were relatively successful kept a low profile. I felt like I lacked the skills needed to understand and appreciate the nuances of what it meant to live in Canada's largest social housing project, and to be a student there.

My teaching colleagues were dedicated and exhausted. We seemed to have a revolving door of suspensions–students being temporarily excused from school because of some wrongdoing or other. It wasn't uncommon to see the police on-site. The school social worker–assigned to many schools, not just ours–was often consulted. Calls to Children's Aid Societies happened regularly. Theft, physical fights, and verbal abuse thrown at teachers weren't uncommon. For me, the school did not feel like a safe space. Some days, it took everything in me to stay empathic and open-minded about my own class of twelve-to-fourteen year-olds.

The school had some initiatives in place to try to combat the out-of-school factors that seemed to impact student success: breakfast, lunch, and snack programs; reading enrichment programs; and a staff member whose role was that of 'community liaison.' There were programs at local community centres that gave kids a safe place to be outside school hours. A new not-for-profit enterprise offering free after-school tutoring and public transit fare for high school students in the community was just getting off the ground.

Over the course of that first year, one specific observation seared itself into my mind: many of my students showed a kind of short-sightedness with regard to their actions. For instance, a student might physically or verbally assault another student, then appear genuinely surprised and shocked when there were repercussions. Many seemed uninterested in even attempting to complete school work–despite my reminders that it was important they try, as each successful year of school got them closer to high school graduation. I recall thinking that it was as if many of them didn't think beyond the actionable moment: that everything happened in the present, with little to no consideration of what came next.

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Over a decade later, I was still thinking about my students from that first year. For year two, I'd been told I was 'surplused' at my current school, and needed to look for a job somewhere else. I managed to land a gig that combined two of my passions–art and libraries–at a cushy midtown school. At the eleventh hour, the opportunity to stay at my original school presented itself, but by then I had already made up my mind to leave. Much to my relief, in my new position I no longer faced the same kinds of struggles in reaching the majority of my students: curricula that might have taken us a month to work through at my first school, my new students whizzed through in just a few days. I was aware, however, that something had been wrong in that first year, and still was. Despite the more academically positive culture, I noticed some of the familiar debilitating patterns presenting themselves in many of my disadvantaged students at my new school, whether their obstacle be systemic biases related to socioeconomic status (SES), or "to race, colour, culture, ethnicity, linguistic origin, disability, age, ancestry, nationality, place of origin, religion, faith, sex, gender, sexual orientation, family status," or a combination of these (*Equity Foundation Statement*, 1999, p. 1). These patterns continued to confound me.

More recently, in graduate school, I was introduced to futures studies, and was immediately hooked. Combining research, analysis, imagination, and strategy, futures studies seemed to simultaneously activate my inner scientist, artist, and idealist. Around the same time, I came across an article (Yirka, 2012) that described how people living in poverty often lack the luxury of the long view–that is, they might have acute needs in the present that impede their ability to conceive of or plan for the long term. This short-term perspective has a cyclical effect, the article explained, preventing people from moving out of their situation, as their focus is on the daily struggle to get by. The article put into words some of what I'd observed at the outset of my career, and over the course of the ten years that followed: the 'short-

sightedness' I saw in some of my students was very real. I then wondered: could futures studies–or strategic foresight–help our socioeconomically disadvantaged students gain some academic leverage? Could one of the keys to better teaching our low-SES students be to give them tools to start to envision, understand, and plan for the future the way their more privileged peers seemed able to do?

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Some teachers' stories of their paths to improving their practice are focused on student improvement, and the deep sense of professional and personal satisfaction that comes from helping foster that. This story is different. Deepening my understanding of what it means to successfully teach students who live in poverty has meant challenging my own biases, assumptions, and prejudice–personally and professionally–before even starting to imagine new ideas for teaching. What's been wrong all along is as much about me as it is the system within which I work. It was never the kids who were the problem, and it never will be. You see, what I failed to notice through all those years is the way I contributed to the debilitating effects of poverty on my students' learning. Exactly how I'd been doing that, however, may come as a surprise. This surprise is what I reveal through this project, and while it might prove to a rather simple concept, it is nonetheless so insidious and unacknowledged that I defy you not to be as shocked and humbled by it as I was.

Unlike Eric Jensen, the well-known American teacher and author who guides many educators in learning current best practices with regard to teaching low-SES students, I don't have a personal background that involves having lived through poverty, abuse, or neglect (Jensen, 2009). What, then, gives me the right to make any claims that this particular research project

might be beneficial? While teachers are not obligated to take an Hippocratic oath like those in the medical professions, among many of us there is a strong sense of responsibility–beyond the accountability to which we are held (Jensen, 2009)–to "nurture the well-being of every child" (Templeton, 2011, p. 3). This goal of nurturing overall well-being is an internalized mandate for many educators, and when taken on with humility and dedication, forces us to transcend the limitations of our personal experience and develop a commitment to helping every child in ways best suited to them as individuals and in community–not merely connecting with kids who are most like us, or whom we are most easily able to understand socio-culturally. Authentic teaching, therefore, is about equity. This project is symbolic of my commitment to the equity imperative, as a teacher and as a person.

I should mention here that I have no training in psychology, no background in time perspective theory, and have only recently been introduced to futures studies (though I have since become well-acquainted with its practices). While I consider myself a veteran teacher, and have taught many socioeconomically disadvantaged kids, I have never before considered myself expert in how to best teach or support them specifically. It was an intuition or hunch that first inspired me on the path to this project, and my learning curve in terms of content and process have both been steep. Much of what I share here is new to me, and I am eager to continue to grow my understanding of these distinct fields moving forward.

I sincerely hope the ideas revealed herein prove inspiring, helpful, and provocative to the reader. I share this project with excitement, humility, and the full acknowledgment that, like all teachers and students, I am foremost a learner and a work-in-progress. Much like a standardized test result, this project is but an expression of my best work at this particular

time (Dweck, 2006). As such, there is always room for growth, and I'm always open to suggestions.

1. Introduction

Our schools are designed to serve middle-class kids. Allow me to illustrate this.

In March 2015, Statistics Canada published a report outlining some of the reasons behind the discrepancies between the academic achievement and subsequent post-secondary attendance of private versus public high school students across the country. Perhaps unsurprisingly, students in Canadian private high schools score, on average, higher in academic achievement and have a greater likelihood of pursuing post-secondary education than their public school counterparts (Frenette & Chang, 2015). But why? An interesting finding that emerged from the study was that there were no significant differences between "school resources and practices" among the study's participating schools, making these factors unattributable to student success in the private institutions (Frenette & Chang, 2015, p. 6). Instead, the report identified the most significant indicators of academic achievement and future success as the socioeconomic status of a student's family, and whether or not the student is surrounded by peers with university-educated parents (Frenette & Chang, 2015). Put simply, kids from financially secure families do better in private high schools and beyond, in part because of their family income, and in part because many of their friends' parents have pursued post-secondary learning.

As educators, this may appear to let us off the hook, implying that all our efforts are essentially usurped by the impact of the socioeconomic status (SES) of our students. A closer examination, however, prompts an entirely different conclusion: the StatsCan report underscores the need for us to once again recognize schools as sites of inequity, and to re-

examine our systems of education to ensure we are not simply creating 'equality of opportunity,' but are instead meeting the real needs of the students we teach. And the report gives us key insights into how we might begin to do this.

"**The fact is that what you teach is far less significant than whom you teach.**" (Lineberg & Gearheart, 2013)

First, we must acknowledge that if the socioeconomic status of a student gives them academic leverage or creates disadvantage, then we are obligated to identify and eliminate barriers that privilege only students who arrive at school unburdened by the sets of out-of-school factors impacting their low-SES peers. Second, we must create new models in education that permit all students to achieve their full potential. This includes identifying the strengths that low-SES students bring to school, and creating opportunities for those strengths to be recognized, honoured, and grown. Doing this means acknowledging the middle-class lens through which education in Canada and the US operates (cite), and challenging aspects of our individual experiences as middle-class educators to better understand and appreciate the myriad circumstances from which our students arrive in classrooms every day. How to do this will become clearly over the course of this project.

So how might we begin to close this so-called student "achievement gap?" There is significant work already being done in this field, and one persistent conclusion is that we need to "take aim at the real issue–poverty" (McNeely, 2012, para. 1). Critics of school reform claim that teachers alone are not alone responsible for differences in achievement, and this may be so (McNeely, 2012). However, not being responsible and not taking action

aren't the same thing. While SES may be a key factor currently impacting student success in our systems of education, it is incumbent upon educators to reassess these systems and to redesign accordingly.

Before proceeding, let me first clarify what is meant here by academic success. High marks and good grades are understood to simply represent the ability to conform and perform to fulfill the expectations of school as we know it today, to whatever degree. Students who are high achievers academically are simply able to succeed in the system, while those who underachieve are not.

To begin to understand the divide created by socioeconomic status in schools, we must first appreciate what skills or aptitudes are needed, currently, to achieve scholastic success. Eric Jensen, linking poverty research, neuroscience, and teaching practice, lists the following 'must-haves' for any student's success in school:

- The ability and motivation to defer gratification and make a sustained effort to meet long-term goals.
- Auditory, visual, and tactile processing skills.
- Attentional skills that enable the student to engage, focus, and disengage as needed.
- Short-term and working memory capacity.
- Sequencing skills (knowing the order of a process).
- A champion's mind-set and confidence. (2009, p. 55)

Jensen, among others, has already begun to lead the way in mobilizing educators to rise to the challenge of updating our industrial-era models of schooling to be more equitable to all students. Foresight for Every Kid adds to that discourse, specifically with regard to the first

item in Jensen's list of success criteria: *the ability and motivation to defer gratification and to make a sustained effort to meet long-term goals*.

> Templeton states, "Those of us with resources can think in long blocks of time. We can think about vacations set to happen in a few months. We can think about retirement. People without resources think about time differently. For example, we might ask someone, "How long did you keep your last job?" The person may reply, "I kept it a long time." Our response might then be, "How long was that?" They might answer, "Oh, two months."
>
> Two months for people with resources is not a long time at all, but when you have resources, you have no concerns about a roof over your head, food on your table, health care for your children, and other amenities often taken for granted in our culture." (2011, p. 24)

When you read this, did the 'us' perspective resonate? Have you thought ahead to a vacation, or happily contemplated retirement? While the purpose of this excerpt is to illustrate the contrasting ways people of differing socioeconomic status might relate to the passage of time, it also highlights middle-class experience: taking vacations, and planning for retirement. These future-focused activities and pursuits are highly privileged ones.

This difference in perceptions of time, it turns out, can be far more consequential than most of us are aware. Being able to delay gratification and set goals–or, put another way, to plan for the future–is not only one of the aforementioned skills required for academic success, but is also considered a hallmark of what it means to be middle-class (Zimbardo & Boyd, 2008). For educators, thinking about the future can feel as natural or obvious to us as considering the present, or reflecting on the past, as most educators are middle-class (either by upbringing, as a product of their profession, or both) (Berliner, 2009). This ability to move backward and forward through time in our minds is known as our 'time perspective'

(Zimbardo & Boyd, 2008). For people living in poverty, however, access to thoughts about the future can be limited or truncated by circumstance, into shorter cycles of planning or anticipation (Zimbardo & Boyd, 2008). Encouragingly, "research shows that our time perspectives are not determined by nature or by some cosmic clock setter, but are learned ways of relating to our physical, biological, social, and cultural environments" (Zimbardo & Boyd, 2008 p. 119). Far from being innate, it seems our ways of mentally scanning through past, present, and possible future events, experiences, and outcomes can be grown and adapted to suit various situations.

Our degree of orientation to the future – that is, the extent to which we are able to imagine and conceive of what might come to pass – is inextricably linked to our ability to set goals and to work toward them (Nurmi, 1991). Returning again to Jensen's list of school success criteria, might not low-SES students' struggle to set and achieve long-term goals be impeded if their life situations do not currently require a developed orientation to the future? And if time perspective is learned, then does this not then present an opportunity for educators to better support and engage low-SES students in a system that privileges those with foresight – that is, a developed future time perspective?

According to Phalet, Andriessen, & Lens (2004), "[f]or students with a negative outlook on their future, attaching a high degree of utility to school results had the opposite effect on their motivation to study (p. 75). The absence of foresight, or an orientation to the future, can be influenced in part by a subconsciously negative association with it (Phalet et al., 2004). For some students, the sense that their future prospects are not good is enough to turn them off even considering the future, and can result in a sense of hopelessness and helplessness (Jensen, 2009). Consequently, school cultures that emphasize the future and

depend upon students' ability to consider how current efforts relate to future prospects may feel foreign to some students, while alienating others. Each time a teacher emphasizes the usefulness of school for one's future to a student who has little to no relationship to the future, they are literally wasting their breath. Again, this presents an opportunity for educators to rethink the ways we teach. This opportunity forms the basis of this inquiry.

How might futures education for K-12 students in socioeconomically disadvantaged communities provide a leverage point for breaking cycles of systemic poverty, if at all?

The research question driving *Foresight for Every Kid* is designed to engage a new investigation that might add fresh insights into to the existing conversation and debate surrounding how we might more successfully reach and teach K-12 students living in poverty in Canada, the US, and elsewhere. As this concern is not new, this project draws on recent research and practices in education, along with an overview of the impacts of poverty on children, aspects of neuroplasticity, time perspective theory, and an introduction to futures studies, to propose new pedagogy for those of us teaching our most socioeconomically disadvantaged students. It's called *Foresight for Every Kid* because it proposes new ways educators might bring foresight skills and the ability to envision a positive future to every student we teach, regardless of circumstance.

The purpose of this project is not to provide an exhaustive report on the root causes of systemic poverty in Canada and the US, nor to break down in detail the intricacies of public education and how it is situated within larger systemic constructs. Instead, it presents what

many of us already know intuitively about present-day schooling and its very real shortcomings, with just enough detail so as to initiate in a new conversation about what it might mean to change our mental models in teaching. In addition to introducing a 'futurized' framework for teaching low-SES students, there is the added proposition of a 'futurized educator profile,' designed to challenge teachers and administrators to re-examine our own mindsets with regard to our relationship to time, and to encourage us to adjust our teaching and leading accordingly. Specifically, this project asks people working in education to examine our own personal time perspectives–the degrees to which we are each past, present, and future oriented–and to consider this internalized, subjective viewpoint in relation to our students' experiences of time, in concert with other established best practices for reaching and teaching low-SES students. Of particular importance is the significant evidence, as outlined in these pages, that the time perspective from which we teach is often misaligned with that of students living in poverty (Gerstl-Pepin, 2006).

Hypothesis

The working hypothesis for *Foresight for Every Kid* is that futures studies and the integration of foresight techniques into K-12 teaching practice can leverage systemic change in education, to improve scholastic outcomes for children living in poverty. These 'futurized' approaches will have a positive impact on low-SES learners by increasing their engagement with school, lengthening their future time perspective, helping them develop a future orientation, and supporting them in setting and working toward long term academic goals. Systemically, these shifts will increase the overall academic success of socioeconomically disadvantaged students, thereby increasing their levels of educational attainment in the long

term. This potential for long-term change in scholastic outcomes for socioeconomically disadvantaged students might form part of a larger poverty reduction strategy, thus helping break cycles of systemic poverty.

2. Methods + Methodology

Despite the ongoing substantial research and widely available literature on how best to support low-SES students' learning in K-12 environments, and the significant work done in the field of time perspective theory in relation to socioeconomic status, and the slow but steady growth of interest in futures studies' potential as a formal subject in schools, there remains little that links all three disciplines. In fact, nowhere in the course of this research project was I able to locate evidence of time perspective theorists making significant links to futures studies to their work, or find examples of how educators working toward more equitable learning experiences for low-SES students are turning to futures studies or time perspective theory for guidance. As such, insofar as I can surmise, *Foresight for Every Kid* brings together three unconnected disciplines with an eye to improving educational experiences and outcomes specifically for low-SES students.

The methodological approach taken for *Foresight for Every Kid* was equal parts investigative and inventive, consisting of a thorough literature review, subsequent information synthesis and analysis, and the design and introduction of two new prospective models for education.

Literature Review

The foundation of this research project is a thorough literature review, and subsequent synthesis and analysis. While this project has implications specifically for K-12 education, the investigation was not limited to that field. The challenge in reviewing the literature was to take seemingly disparate fields of inquiry and examine them for potential overlaps and

opportunities. In each case except where noted, both peer-reviewed journal articles and books were the key sources used in the information gathering process. The areas investigated were as follows:

- Futures Studies
- The symptoms and impacts of poverty on children in Canada and the US
- Current pedagogical approaches to supporting K-12 students living in conditions of poverty
- An overview of key findings from a review of popular books on neuroplasticity, specifically in the areas of: the psychology of mindset; the influence of context on perception; and the psychological and neurological impacts of scarcity.
- Time Perspective Theory

Synthesis + Analysis

The synthesis and analysis of the literature review were performed through the identification of overlapping themes, concepts, and study findings, in order to identify connections across disciplines. For instance, some time perspective theorists have proposed that more can be done in schools to promote a balanced time perspective for all students (Phalet, Andriessen, & Lens, 2004). However, as time perspective theory itself does not necessarily overlap with education theory, there is a dearth of detailed examples as to how to begin to conceive of those educational interventions. Similarly, there are identified opportunities to further grow our educational interventions for low-SES students as found in the education-related literature, but some specific cognitive and neurological realms of study are not necessarily being consulted for insights into how we might develop new best practices in teaching, despite their potential usefulness; the synthesis and analysis of the literature review

presented in *Foresight for Every Kid* attempts to bridge some of those gaps. Part of the researcher's bias was to look specifically for evidence that would justify and support the project's hypothesis.

Frameworks for Change

Lastly, two distinct but related models for change are introduced. The first model is the profile of a 'futurized educator,' encapsulating elements of existing best practices in teaching with key findings from this investigation. The second is the introduction of a futurized teaching framework process, designed to be used by educators interested in the integration of futures studies practices into their teaching, so as to offer 'foresight for every kid.'

Notes on the process

The methodological approach taken for this research project evolved slightly from its conception to completion. The project was initially designed to include a classroom-based qualitative experiment, informed by the literature review. The classroom experiment would have included surveys designed to measure the future orientation of the participating middle-school students both before and after a 2-week future-focused unit of study, led by the principal investigator (I am also a certified K-10 teacher), that implemented the futurized teaching process model shared herein. At the outset of the experiment, nine other classrooms–in schools across Toronto representing a cross-section of socioeconomic levels–would have also taken the survey to establish whether there were any measurable differences between the baseline future time perspectives of students of differing SES. Only

the students participating in the classroom sessions would take the follow-up survey, to determine whether teaching using a futures studies-inspired framework resulted in any perceptible shift in future time perspective.

While the classroom-based research component was approved by OCAD University's Research Ethics Board, it was subsequently turned down by the Toronto District School Board's (TDSB) External Research Review Committee. The TDSB committee included a thorough explanation as to their dismissal of the proposal. They noted researcher oversights including letters of invitation to participate in the study that required further clarification, and insufficient evidence of how students would be supported through the experiment if they felt vulnerable or didn't want to participate. Other aspects of the dismissal, however, included less-clear internal questions regarding how the review committee might approve of a pedagogical proposal that included subject matter outside the scope of expertise of the committee. While the dismissal of the proposal was a disappointment as it meant the proposed framework could not be tested nor the results shared as part of the overall project, there remains an opportunity to perform this experiment in the future, whether through re-submission to the TDSB committee, or in another school board.

The end result, therefore, does not include a tested hypothesis. The original research question and hypothesis are well supported here, but remain open to further investigation, either by the principal researcher or others who may be convinced of the utility of this project and its overall goals. Additionally, while this project does present many compelling reasons for why educators might consider futures studies as a means to engage, challenge, support, and grow the future orientation of low-SES students specifically, this project was unable to locate any empirical evidence that undeniably supports this proposition.

3.1 Introduction to the Literature Review

The literature reviewed for *Foresight for Every Kid* comprised more than seventy unique scholarly articles and books spanning the various domains of inquiry. Despite this breadth, there are a handful of authors whose works anchor this project, and are mentioned repeatedly. Eric Jensen is often referenced, as he is at the forefront of education research and best practices informed by neuroscience, and has performed in-depth investigations into the full range of research on the impacts of poverty on young people, along with the most effective ways to support their learning. Sendhil Mullainathan and Eldar Shafir, co-authors of the popular 2013 book, "Scarcity: Why Having Too Little Means So Much," have contributed widely to research into the psychological and neurological impacts of scarcity, and co-authored with other researchers several more articles that are also cited. Carol Dweck, author of the best-selling 2006 book titled, "Mindset: The New Psychology of Success" has also proven influential in the field of applied psychology for her insights into the transformative power of people's attitudes toward success and failure. Philip Zimbardo and John Boyd are often cited as their work is seen as pivotal in the field of time perspective theory. Lastly, in the domain of futures studies, Peter Hayward's work linking time perspective theory and futurism was especially helpful in understanding what's known about the psychological implications of studying the future, as were Jennifer Gidley's writings on the observed positive and negative impacts of futures work with youth.

Depending on the author and discipline, the literature consulted for this investigation used a variety of terms to describe similar concepts. In the interest of equity, throughout this project I have made my best attempt to consistently use language that is inclusive, respectful of

people's dignity, and that highlights the inherent biases and prejudice often present in media representations of systemically disadvantaged people.

In some of the reviewed literature, the term *low socioeconomic status* was used interchangeably with *poor*, *poverty*, *low-* or *lower-class*, *low socioeconomic level*, *disadvantaged*, *underprivileged* and others. I'm conscious of how the language we use to describe people's income levels and associated experiences can be read as hierarchized depending on context and spoken intonation, and how this language contributes to the perpetuation of poverty and systemic privilege in that it can imply judgment that elevates or diminishes a person's social status. 'Status,' as opposed to 'level,' therefore, seems to more objectively represent a person's socioeconomic reality because it points to the kinds of systemic discrimination or privilege they might experience based on their degree of income in society, along with other sociocultural barriers and advantages–hence my decision to primarily use *socioeconomic status* throughout this document when referring to relative degrees of poverty and wealth and their corollary issues. I use the abbreviations *low-SES* and *high(er)-SES* when referring to people of low socioeconomic status and high(er) socioeconomic status, respectively. From time to time, I also use the phrase *conditions of poverty*, specifically when describing the myriad factors experienced by a person or family whose income falls below what is considered a minimum liveable level by different governments (municipal, state or provincial, and federal). I also use the terms *privilege* and *(dis)advantage*, again to emphasize how income level precludes or promotes access in our society because of systemic and environmental prejudice and discrimination. The intention throughout is to avoid perpetuating the stigmatization of people living with limited means, and instead to underscore that any person may find themselves disadvantaged in our society based on income alone.

While any one of us might find ourselves living in conditions of poverty in Canada or the US, the ratio of racialized[1] people living in poverty as compared to white people is staggering in its contrast and I can't write about socioeconomic status and not acknowledge the incredibly high correlation between racialized people and low income. This holds especially true for Black and Hispanic people in the US, and off-reserve aboriginal people in Canada (*People in Poverty by Selected Characteristics*, 2013; Murphy, Zhang, & Dionne, 2012). Again, the term *socioeconomic status* helps to highlight how income level is not the sole determinant of social status, and that as long as we continue to perpetuate white supremacy and white privilege in Canada and the US, we will continue to see racialized people face barriers to economic opportunity. In addition to the negative impacts of institutionalized and environmental racism, there are increased correlations between poverty and other environmental and systemic barriers (Berliner, 2009).

The scope of this project, however, does not extend to include an analysis of the root causes of systemic poverty or discrimination, nor does it attempt to provide detailed insights into how someone might arrive at living on a limited income. Instead, it provides a brief overview to help define systemic poverty and its associated experiences, to frame the discussion.

Additionally, I have elected to use the pronouns *they* and *their* throughout this document in place of *him/her* and *his/hers* when referring to unnamed persons (such as a teacher or

[1] The terms 'white' and 'racialized' are used intentionally here to highlight how white supremacy is perpetuated through the active racialization of all others who are not seen as 'white.' The use of the term 'racialized' emphasizes the inherent privilege of 'whiteness', a privilege that includes not needing to acknowledge or recognize race.

student, for example) if the sex or gender of the person being described is considered irrelevant.

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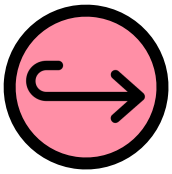
The spirit of this project is in line with current progressive views on education, especially those that value the prospect of educational transformation over mere reform. That said, what is being proposed in *Foresight for Every Kid* can be enacted within traditional classroom settings as well as those taking a more outside-the-box approach, as the intention is to encourage harmony between humble self-awareness and confident teaching, and to acknowledge the learner that is at the heart of both teacher and student.



3.2 Futures Studies

> "The purpose of looking to the future is to understand the possibilities ahead in order to make more informed decisions in the present. Good futures work reduces the risk of being surprised or blindsided. It can build momentum toward more favorable pathways and away from unfavorable ones." (Hines & Bishop, 2006, p. 29)

To begin the literature review, I offer an introduction to the field of futures studies and its relationship to K-12 education. Note that the scope of this review does not allow for the illuminating of any contentious issues about the field debated by those working within it. Instead, it is meant to deepen the reader's understanding of the research question and hypothesis at the heart of *Foresight for Every Kid*. I'll begin by clarifying what's meant by the term *foresight*.

In defining foresight, Hayward (2005) summed it up simply when he compared our mechanisms for reflecting on past actions with how we consider the future. He defines *hindsight* as the process of having thoughts about an action after the action has taken place; for example, the expression 'hindsight is 20/20' is a colloquial way of acknowledging when we have gleaned particularly useful insights in thinking back on an event. Hayward takes this definition of hindsight and inverts it, in turn illustrating the meaning of the term foresight: foresight involves thinking about or considering an action or outcome *prior* to its occurrence. Foresight allows us to learn from the idea of a possible event or action, without having to experience it in reality. Both hindsight and foresight have useful implications for our learning

(Hayward, 2005). Some argue that all decision-making processes involve the engagement of some degree of foresight (Lloyd & Wallace, 2004).

The definition of foresight is central to what is known as *futures studies*. In the 1970s, Cornish characterized futures studies as a discipline that takes advantage of our inherent foresight ability by studying its processes seriously and rationally (in Lloyd & Wallace, 2004). What makes futures studies different from our mostly unacknowledged day-to-day use of foresight is that it involves methodical, systematic approaches for considering the future (Cornish, 1977; in Lloyd & Wallace, 2004). Bishop and Hines (2012) describe futures studies as processes devoted to the study of the future, akin to the way "historians study the past," or journalists analyze the present (p. 1). As with the latter two disciplines, there is much variation in ideology, methods, and approach in futures studies, and there are established many branches of the field that encompass different sets of methods and tools, all with the same fundamental intent to survey the future in some way (Lloyd & Wallace, 2004).

One of the key tenets of futures studies is the notion that 'the future' is not singular. As such, when reading the literature on the subject, the term 'futures' was found throughout. The justification for this pluralization relates to the idea that the future, as Bishop and Hines (2012) put it, "is a set of plausible outcomes rather than one future to be discovered" (p. 8). While those newly introduced to the field might argue that only one future will ever come to pass, an assertion in futures studies is that when considering what *may* come to pass, there are myriad possibilities. As such, those working in futures studies are not typically invested in correctly predicting a singular future, but instead methodically exploring possible futures. This exploration can help inform present-day actions to help guide us toward our most

preferred futures. An introduction to some of the specific methods and tools used in futures studies to achieve these aims will follow later in this section.

Those engaged with the field of futures studies tend to refer to themselves as futurists. Futurists "survey the future" using the concepts, tools, and methods of futures studies in critical, engaging, and practical ways (Bishop & Hines, 2012, p.7). Futurists apply their skills toward varied aims: "the desire to win in the marketplace [or] the quite different desire to allow one's grandchildren to inherit a world fit to live in. [...] [T]his mix of desires – military security, economic profit, social justice and the environment – [...] provide the main energy behind most foresight work" (Nelson, 2010, p. 23-24). Jim Dator (2002), asserts that futures studies is "interested not in itself furthering any particular view of the future, but rather furthering [...] inquiry into the future" (p. 7). Thus there is a degree of neutrality or objectivity required of a futurist when engaging in futures studies or doing futures work, along with an appreciation of the potential breadth of its goals. The challenges inherent in striking a balance between a futurist's preferred futures and the neutrality required when working in the discipline have been acknowledged, though in literature not reviewed for *Foresight for Every Kid*.

Futures studies–or futures work, as engagement with futures studies is often called–can be pursued in professional contexts, where it is often referred to as strategic foresight. Consultants or in-house futurists will engage with formal foresight processes to help inform business strategy (Hines & Bishop, 2006). Futures work can also be done on a more personal level, through personal foresight exercises that help individuals set goals and work toward preferred outcomes in their lives (Hayward, 2005).

In “The Handbook of Technology Foresight: Concepts and Practice,” Ian Miles (2008) provides an overview of the history of futures studies and foresight practices. He explains that while humans have always had a fascination with and concern for the future, the formalized futures studies practices used in Canada and the US today rose to prominence in the early part of the twentieth century. Borne partly out of the American military’s bringing together of academics, military personnel, and private enterprise to form “think tanks” aimed at winning the Second World War, foresight practice in the United States was first and foremost a strategic one grown in part thanks to the tremendous amount of money poured into the American war effort. The simultaneous cultural valuing of science and technology, in both the civilian and military realms, was inspiring people to think forward in new ways. The military influence continued to inform the development of contemporary futures studies practices in the US until the late sixties, as those involved in military strategy had gone on to work in the corporate sector and brought these skills with them. An interest in the potential for futures studies to help imagine and cultivate positive futures in other realms beyond the military/industrial complex and the private sector began to emerge in earnest in the 1960s. Distinct branches of futures studies were developing alongside the Americanized field in other parts of the world, too, often informed by similar issues but differently nuanced. Central to all of these emerging practices was a desire for change preparedness, achieved through an analysis of the past and present, creative projection into the future, and subsequent decision-making and goal-setting. This holds true of futures studies today.

Futures studies is both a theoretical and applied discipline, and it’s the applied aspects of the domain with which this literature review is chiefly concerned. In order to contemplate possible futures–and to consider which futures are most probable, or preferred–specific sets of tools and methods are used in the process. The purpose in futures studies is not usually

to make singular, concrete predictions, but instead to evaluate multiple ideas of the future based on what is known today (Hines & Bishop, 2006).

The methods employed by futurists are structured around the understanding that there are broad general classifications used for the defining of the futures: they are the *possible*, *probable*, and *preferred* futures (Candy, 2010). In some cases, the words *plausible* and *prospective* are also used, but in the interests of brevity and simplicity, this review will focus only on the first three as they appeared most often in the literature.

The possible futures are all the potential ways in which the future might come to pass, and is the broadest descriptor of futures. To wit, possible futures are limited only by what might be considered impossible. All of that which is conceived of by futurists through futures work can fall into the realm of possible futures.

The probable futures, on the other hand, are ideas of the future most likely to come to pass, and as such comprise a much narrower swath of ideas. Preferred futures, while also a smaller selection of possibilities, are instead those visions or ideas of futures that hold the most appeal. Futures considered preferable are not universally agreed upon, but are subjectively defined by those working in the context within which they are being explored, as one person's ideal or best outcome may not align with another's.

Ideas of probable futures usually nest within the realm of possible futures. Preferred futures, however, while situated within the possible and potentially overlapping with the probable, might also extend beyond the boundaries of the futures we imagine are possible (Candy, 2010).

Futures studies uses tools and methods to imagine possible futures, so that organizations and individuals can evaluate them to discern probable and preferred futures. If preferred futures are identified, then stakeholders can develop strategies to use now and in the long-term to increase the likelihood that their preferred futures will come to pass. As we will never arrive at the future, the work of futurists is actually intended to foster change in how we live and act today, so as to help us move toward preferred futures (Candy, 2010).

The methods employed by futurists are varied, and as with any discipline, each practitioner or strategic foresight organization will adapt the tools to some degree to suit their purposes. Most, however, build their approaches from three basic steps:

1. Scanning
2. Scenario generation
3. Strategizing

In order to conceive of possible futures, futurists are practiced at what is called 'scanning.' Scanning involves carefully examining the past and the present for what are called 'signals', 'trends,' and 'drivers.' Signals are emergent issues or 'seeds of change' that point to something not yet fully developed (an ideology, environmental concern, concept, product, or social issue, for example), that may be prescient or likely to grow in significance or impact over time. The challenge for futurists is to attempt to identify and justify why some signals have the potential to become more influential than others, by looking for relationships between signals that may represent a trend. Futurists cannot know for certain which signals have the highest likelihood of becoming significant or impactful, but they can apply a keen

analysis of historical and established trends as ways to elucidate and justify their arguments. To ensure that a broad range of signals and trends are captured in the scanning process, a futurist might use a STEEP+ analysis, or similar tool. The STEEP+ prompts (*social*, *technological*, *economic*, *environmental/ecological*, and *political*; the '+' is symbolic of the sometimes-added V for *values*) are lenses through which scanning can be performed, to ensure the scrutiny of a broad base of domains.

Somewhat harder to identify are the drivers, or underlying causes, that push certain signals to grow into trends. Drivers tend to operate at a societal level, and are not usually concrete or tangible items or products. Instead, drivers are often fundamental mechanisms woven into the fabric of society that push people and organizations to make certain decisions or follow particular paths. Drivers can be ideological underpinnings, environmentally impactful incidents, economic variables, or other large-scale factors that influence societies. An understanding of past and current drivers can help futurists identify which signals are more likely to develop over others.

Once a futurist has identified and justified their assemblage of signals and trends, they are poised to begin the process of scenario development. In futures studies, scenarios describe possible futures. They can be as simple as a series of comparative bullet points organized in a table, may take on a story-like narrative format, or employ art and design tools to create experiences or artifacts that represent futures. Because futures work is not about trying to determine a single future that may come to pass, futurists often create a series of scenarios that describe different possibilities. The scenarios aren't randomly generated, however, but instead are informed by the research and scanning work done prior. The challenge is to determine which scenarios to share, as there are innumerable versions of the future that

might emerge when using signals, trends, and drivers as prompts. So before a futurist can create a scenario, they often use a framework or method to organize their scanning insights, to arrive at ideas for each scenario. There are many frameworks that can be used, and I'll touch on two of them here.

One approach to determining the trajectory of the four scenarios is called a 2-by-2 matrix. The matrix is formed by two intersecting axes, each axis representing an issue. The two issues on the axes will be determined through the scanning work and the needs of the stakeholders or clients for whom the scenarios are being generated, will specify two different issues or drivers that are considered discrete, which are often referred to as 'critical uncertainties.' For example, one axis might represent the economy, and the other the environment. While these two subjects have a systemic relationship, they are distinct enough to form interesting quadrants in the matrix created by the intersection of the axes. The axis labeled *economy* might signify, at one end, economic collapse, the other end economic growth. The *environment* axis might signify degradation at one end, and its protection at the other. Each end of these axes is representative of opposing possible futures for each critical uncertainty.

From the matrix created by these two labeled axes there emerge four quadrants representing four possible futures: one is a future defined by economic growth and environmental degradation, the next economic growth and environmental protection. The third quadrant represents a future of economic collapse and environmental protection, and the last economic collapse and environmental degradation. The stories we might tell of the futures in each of these quadrants would be vastly different, which demonstrates the matrix's practicality for generating four distinct scenarios.

Another way to generate scenarios is using Dator's four generic images of the future. Dator's model approaches scenario generation through the consideration of four distinct possible futures: growth, collapse, discipline, and transform. Growth futures are "the dominant image of the future. This view suggests that whatever exists now, and has existed over the past several hundred years, will change, but the same fundamental processes will still be operating in the ways they do today" (Dator, 2014, p. 61). Collapse futures, on the other hand, "can encompass ideas about the collapse of our society, or our country, our organisations, perhaps even ourselves. [They contain] the fear that we will not be able to continue, and that in fact a collapse to unknown consequences might occur. Collapse images of the future are very prominent in many parts of the world at the present time" (Dator 2014, p. 61-62). Discipline futures "ha[ve] the notion that there are fundamental values—whether religious, cultural, or natural— that we must live our lives according to. The idea of sustainable or green societies are variations of this image. We must discipline ourselves according to these limiting but enabling values. Therefore we cannot have unrestrained economic growth or unrestrained growth of any kind" in discipline futures (Dator, 2014, p. 62). Lastly, transformational futures are ones where we have "fundamentally alter[ed] the way we live now, or ever have lived, because of massive, unwitting changes we have made in our natural environment, on the one hand, and the novel consequences the emerging technologies of robotic, artificial intelligence, biology, post-humans, transhumans, nanotechnology, and space settlements, on the other. What this future will actually be like is impossible to say because it is novel in so many ways. It is like asking a caterpillar to imagine what she will be like as she morphs into a butterfly" (Dator, 2014, p. 62). These four generic images of the future can be populated with information from the scanning process to help substantiate each scenario, as with the 2x2 matrix.

Whether one uses the 2x2 matrix, the four generic futures, or another framework for conceiving of distinct scenarios of the future, part of the decision-making process is to determine how 'far' into the future the scenarios should project. Five years? Ten? Twenty? It is at the discretion of the futurists involved to evaluate what frame of time would be most useful for reflection and strategizing for the purposes of the client or whomever is implicated in the work. Using foresight to investigate the futures of technology, for instance, might involve a relatively short time frame of five to eight years, due to the rapid rate of change in the field. Exploring the futures of democracy, on the other hand, might involve an extension further into the future, given the relatively slow rate of change in that realm.

Once developed, the scenarios are then used for contemplation. They can be held up against individual and institutional goals, wishes, fears, and questions, to help determine which future or futures might be preferable. And thus the strategic process is engaged, the scenarios acting as barometers for measuring ideas, approaches, and goals, to be developed into action plans.

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> "People use foresight every day. Why not explicitly teach students to use their natural human instinct to anticipate, plan, and influence their own future and the future of their organizations and communities. What greater mission could we as teachers have than to really prepare students for the future!" (Bishop & Hines, 2012, p. xvii)

As the hypothesis for *Foresight for Every Kid* speculates as to futures studies' potential to bring time perspective equity to low-SES students thereby increasing academic advantage,

research into the use of futures studies tools with disenfranchised youth was of particular interest. Gidley (2004) recounts a study designed to assess the potential in using formal foresight processes for mediating hopelessness in teens, who also showed higher incidences of depression and suicide risk. Significant to the investigation was previous research indicating that youth experiencing feelings of hopelessness also showed a fearfulness of, and negative outlook on, the future. A program called 'Creating Positive Futures,' consisting of four workshops, used futures studies frameworks to generate images of the future with the participating youth, and helped them to focus on positive futures. The outcome of the study revealed that the young people's views of the future improved significantly following their futures studies program. The male participants showed a decreased level of hopelessness upon completion of the program. A portion of the female participants, however, actually described feelings of increased hopelessness, and some participants needed follow-up counselling to mediate the after-effects of the workshop experience. I am highlighting this in the interest of transparency, despite how it might limit the perceived effectiveness of what I'm proposing in *Foresight for Every Kid*.

In another example shared by Gidley, it was observed that exposure to foresight practices elicited in students "cognitive dissonance, confusion, and discomfort" at the outset of their involvement in a futures studies program. As the program progressed, it appeared that involvement in the process brought about "a grief response to losing their previously held worldviews," but that these expressions of grief (that included "anger, depression, guilt, fear") ultimately led to "a new heart-felt caring for the world and others." Ultimately, the students involved "reported feelings of personal power and renewed hope" (Gidley, 2004, p. 22-23). Could the negative findings of the earlier study have been linked to the brevity of the program, initiating a grief response in some participants without the appropriate provision of

time to arrive at feelings of renewed hope? Whatever the case, it is worth noting that the experience of participating in futures studies may bring about challenging psychological and emotional responses in students, and that these factors would need to be taken into account when considering implementation of futures studies programming in K-12 contexts. The potential for positive outcomes, however, is also implied in these studies, and must not be discounted.

When considering the role futures studies might play in our systems of education, there is an important distinction to be made: whether to insert futures studies into classrooms as its own distinct subject (like history, geography, or science), or whether to futurize teaching practices. 'Futurizing teaching' means weaving foresight practices and approaches into the teaching of any or all subjects, by adopting a future-oriented frame of mind when designing and delivering course curricula (Strong & Bishop, 2011). As such, futurizing teaching refers to a refined pedagogical model, whereas implementing a futures studies program suggests the development of curricular content. While the research question in *Foresight for Every Kid* specifically cites futures studies' potential in mitigating low-SES students' academic success, it is perhaps the implementation of a futurized teaching model inspired by futures studies that might best achieve this. The rationale for this argument will be discussed in the analysis section following this literature review.

The extent to which futures work is generally unfamiliar to those outside the field, however, is an indication of how these formalized processes are not already embedded in our education systems. Those working as futurists may have pursued post-secondary studies in strategic foresight or futures studies, and a rare few may have had exposure to the practice in high school. Despite its regular omission from curricula and pedagogy, it has still been taught in K-

12 systems enough that there is some information measuring its impact and value for young people's learning. This project is not designed to provide access to the small wealth of existing futures studies teaching resources to educators who are interested in bringing the study of the future into their classrooms, though the futurized teaching framework shared later in this document is in line with some of those approaches.

While there isn't sufficient scope in this project to fully explore the range of potential benefits inherent to the introduction of futures studies and futurized teaching to school systems, it is worth noting some promising outcomes that may be linked to the pursuit of futures work with low-SES kids: the emotional and behavioural regulation that can arise from imaging processes (Jung, 1974; Taylor, Pham, Rivkin, & Armor, 1998; in Lloyd & Wallace, 2004); the motivational potential inherent to the development of concrete visions of the future (Bishop & Hines, 2012); foresight's potentiality in helping counter fears (Gidley, 2004); an increased resiliency in the face of change (Gidley, 2004); how it might further the goals of democracy (Candy, 2010); the opportunities it provides to analyze the structures and systems of schooling itself (Gidley, 2004); opportunities for students to engage collectively in their explorations of ideas of the future (Hines & Bishop, 2006); and the experiences of increased hope, motivation, and direction that can arise from engagement with futures thinking (O'Connor & Ramos, 2006). This list is not exhaustive. It should be further noted that many of the benefits cited above overlap with best practice recommendations made in the section focused on teaching low-SES students in this literature review.

3.3 Systemic Poverty + Children

> "At this point in time, poverty is clearly a condition which afflicts only a minority – a dwindling minority – of Americans. The recent average rate of change, namely, a fall in the percentage of families in poverty by one percentage point per year, suggests that the poverty problem is about twenty years from solution." (Lampman, 1965)

In the fifty years since Lampman published "Approaches to the Reduction of Poverty," we have not witnessed a significant reduction in poverty levels, let alone the elimination of poverty in Canada or the US. Statistics Canada states that 12.9% of all Canadians lived on 'low income before tax' in 2011. While Statistics Canada data does not offer insights into income rates in relation to race other than for off-reserve Aboriginal people, it does state that low-income rates are higher for recent immigrants, people with disabilities, off-reserve Aboriginal people, elderly people, unattached non-elderly people, lone-parent families, and children (Murphy, Zhang, & Dionne, 2012)[2]. In the US, the 2013 census reports that the official poverty rate was 14.5%. However, that number breaks down to 27.2% of Black Americans living below the poverty line in 2013, along with 23.5% of Hispanic Americans, as compared to 9.6% of white Americans. American adults with a disability had a poverty rate of

[2] It should be noted that Statistics Canada has deliberately chosen not to use the term 'poverty' in their work, in the absence of a federal agreement as to what constitutes the definition of poverty. As a result, individual organizations in Canada have attempted to measure poverty rates in the absence of an official government measurement, and results vary. In a document from 1997 outlining its position on the matter, Statistics Canada posited that "proposed poverty lines have included, among others, relative measures (you are poor if your means are small compared to others in your population) and absolute measures (you are poor if you lack the means to buy a specified basket of goods and services designated as essential). Both approaches involve judgmental and, hence, ultimately arbitrary choices" (Fellegi, 1997, para. 5).

28.4%. The poverty rate was higher for people living in urban areas, and for those foreign-born. 19.9% of American children lived in poverty in 2013 (*People in Poverty by Selected Characteristics*, 2013).

> Eric Jensen defines poverty "as 'a chronic and debilitating condition that results from multiple adverse synergistic risk factors and affects the mind, body, and soul.' However you define it, poverty is complex; it does not mean the same thing for all people." (Jensen, 2009, p. 6)

The danger in the word poverty is in its deceptive simplicity, for its succinctness masks how it is actually a wicked problem[3]. Despite sounding quite singular, the term poverty can be understood as an umbrella term representing a host of factors that, as Jensen states above, actually describes a complex condition. The contexts and causes of poverty are also varied, but can result in similar symptoms (Jensen, 2009). While the side effects of living in poverty can be listed on a case-by-case basis, the actual root causes that perpetuate systemic poverty are not easily identified: we cannot draw boundaries that encapsulate where poverty

[3] "A wicked problem is a social or cultural problem that is difficult or impossible to solve for as many as four reasons: incomplete or contradictory knowledge, the number of people and opinions involved, the large economic burden, and the interconnected nature of these problems with *other* problems. Poverty is linked with education, nutrition with poverty, the economy with nutrition, and so on." (Kolko, 2012) "Consider, for example, what would be necessary in identifying the nature of the poverty problem. Does poverty mean low income? Yes, in part. But what are the determinants of low income ? Is it deficiency of the national and regional economies, or is it deficiencies of cognitive and occupational skills within the labor force ? If the latter, the problem statement and the problem "solution" must encompass the educational processes. But, then, where within the educational system does the real problem lie ? What then might it mean to "improve the educational system"? Or does the poverty problem reside in deficient physical and mental health ? If so, we must add those etiologies to our information package, and search inside the health services for a plausible cause. Does it include cultural deprivation? spatial dislocation? problems of ego identity ? deficient political and social skills ?--and so on. If we can formulate the problem by tracing it to some sorts of sources--such that we can say, "Aha! That's the locus of the difficulty," i.e. those are the root causes of the differences between the "is" and the "ought to be" conditions--then we have thereby also formulated a solution. To find the problem is thus the same thing as finding the solution; the problem can't be defined until the solution has been found." (Rittel and Webber, 1973, p. 161)

as a societal issue begins and ends (Kolko, 2012). As with all wicked problems, the very fact of poverty's nuanced and variable causes and outcomes evade a neat definition, let alone a single solution.

The condition of poverty is rooted in scarcity, specifically scarcity of money. Research on the human brain has identified cognitive and behavioural impacts caused directly by scarcity. The research extends beyond scarcity of money, and explores other types of scarcity, such as scarcity of time and scarcity of food. A person of high-SES, for instance, may not lack access to funds, but may feel short on time. In each case, scarcity research has identified similar impacts on the brain regardless of scarcity type, revealing that a lack or absence of something crucial leads to what the researchers refer to as *tunnelling* (Mullainathan & Shafir, 2013). Tunnelling can be described as a conscious or unconscious fixating on that which is scarce, to the exclusion of other important life factors (Mullainathan & Shafir, 2013). The findings are compelling when considered in relation to poverty, as those who have not personally experienced conditions of poverty may be able to begin to understand its personal impacts in relation to other experiences of scarcity. For example:

> "We might see a busy person neglect his children and conclude that he does not care as much about his kids as he does about his work. But that may be wrong [...].The busy person may be tunneling. He may value his time with his children greatly, but the project he is rushing to finish pushes all that outside the tunnel. He may look back later in life and report a great deal of anguish about not having spent more time with his children. This is genuine anguish and not merely compliance with a social norm. It is the predictable disappointment of anyone who tunnels. Projects must be finished now; the children will be there tomorrow. Looking back at how our time and money was spent during moments of scarcity, we are bound to be disappointed. Immediate scarcity looms large, and important things unrelated to it will be neglected. When we experience scarcity again and again, theses omissions can add up. This should not be confused with lack of interest; after all, the person himself regrets it.

> […]
> Scarcity alters how we look at things; it makes us choose differently. This creates benefits: we are more effective in the moment. But it also comes at a cost: our single-mindedness leads us to neglect things we actually value." (Mullainathan & Shafir, 2013, p. 38)

The choices we make in times of scarcity have several significant implications. First, tunnelling compels us to focus on a singular goal: accessing that which is scarce. This happens at the exclusion of other goals, regardless of their degree of importance. Scarcity, therefore, can actually suppress our urge or desire to pursue other goals (Mullainathan & Shafir, 2013). Second, scarcity limits aspects of our cognitive capacity, or available 'bandwidth' (Mullainathan & Shafir, 2013). Critical to this understanding is that this bandwidth limitation, whether brief or prolonged, is an issue of accessibility and not capacity. That is, the fundamental cognitive capacity of the person is not reduced, merely the degree to which parts of their cognition can be engaged during times of scarcity.

Perhaps most significant to this research, however, is the relationship between scarcity and neuroplasticity. Scarcity, while having obvious impacts on neurological functioning, does not create irremediable deficiencies (Mullainathan & Shafir, 2013). The human brain can be retrained and encouraged to form new neural pathways, despite adversity (Jensen, 2009). Mullainathan and Shafir have also revealed that despite scarcity's negative impacts, it also has benefits. The way scarcity forces us to focus our attention and to make the most effective use of whatever is available is a highly developed survival mechanism (Mullainathan & Shafir, 2013). More on these aspects are discussed in the section on poverty and schooling.

In the current literature on children and poverty, there emerges a consistent finding: the direct relationship "between socioeconomic status and child outcomes across all developmental periods in childhood and adolescence" (Shanks & Robinson, 2013, p. 3). Specifically, poverty creates a series of risk factors including "social and emotional challenges, acute and chronic stressors, cognitive lags, and health and safety issues" Jensen, 2009, p. 7). Jensen's list of risk factors, while named, are not necessarily mutually exclusive: for instance, cognitive limitations caused by poverty can have repercussions impacting health, safety, or stress levels. These intermingling symptoms highlight poverty's systemic insidiousness both within families and society. It is the situation of living with limited means that can result in a host of corollary issues that create extreme challenges for people. From limited access to basic needs, to social, emotional, and cognitive barriers, the reality of having little or no money results in a range of obstacles that not only make life more difficult, they contribute to the perpetuation of that experience.

Family configuration in times of financial scarcity can have a direct impact on a child's well-being. Research indicates that children raised by two biological parents fare better than those raised by a single parent, because two parents raising children together can be a less stressful experience as compared to parenting alone (Cooper, McLanahan, Meadows, & Brooks-Gunn, 2009, in Shanks & Robinson, 2013), and lone-parent families in both Canada and the US have higher instances of poverty (cite). The number of people living in a household, and their relationships to one another, can also impact a child's overall well-being, especially if resources are scarce and there is not enough to go around (Shanks & Robinson, 2013). In homes where caregivers feel exhausted and stressed, there is a tendency toward more authoritarian parenting, including harsher disciplinary measures (Jensen, 2009). Overtired parents may also 'lack warmth and sensitivity' (Evans, 2004, in

Jensen, 2009), and 'fail to form solid, healthy relationships with their children' (Ahnert, Pinquart, & Lamb, 2006 in Jensen, 2009). Parental involvement can be adversely impacted by poverty, ranging from how a child's basic material needs are met, to whether or not there are ample opportunities for family communication including conversations about social and cultural issues, to educational support, to engagement and involvement with personal growth opportunities outside the home (faith-based meetings or sports, for instance). The presence of family violence, substance abuse, illegal activity, or parental mental health issues can also impact the degree of parental presence and involvement available to a child (Shanks & Robinson, 2013).

Children living in poverty have an increased likelihood of displaying anti-social behaviours and emotional challenges, including "disobedience, impulsiveness, and difficulty getting along with peers" (Shanks & Robinson, 2013, p. 16). Additionally, the feelings of hopelessness that can accompany living in conditions of poverty can develop into learned helplessness, understood as an "adaptive response to life conditions" (Jensen, 2009, p. 113). Learned helplessness is a feeling of overall futility, brought on by feeling helpless to make significant changes to one's circumstances. It manifests as passivity and a fatalistic attitude. Kids can develop feelings of learned helplessness as early as first grade. There is a direct correlation between learned helplessness and an increased risk of dropping out of school and teen pregnancy (Jensen, 2009).

While every person experiences some degree of stress, and it is important to develop the ability to manage stress, the kinds of stressors experienced by low-SES children are often more pronounced, and chronic. This kind of ongoing, often debilitating stress is referred to as toxic stress, and exposes children to elevated levels of cortisol (a stress-response hormone),

and may also result in damage to the brain's 'architecture' (Shanks & Robinson, 2013). These changes can manifest as altered behaviours, including a lowered willingness to take risks, resulting in "low investments in long-term outcomes such as education and health" (Haushofer & Fehr, 2014, p. 862). There is also evidence that living with chronic stress can impact a child's working memory (Shanks & Robinson, 2013).

> "Being poor means coping not just with a shortfall of money, but also with a concurrent shortfall of cognitive resources. The poor, in this view, are less capable not because of inherent traits, but because the very context of poverty imposes load and impedes cognitive capacity. The findings, in other words, are not about poor people, but about any people who find themselves poor." (Mani, Mullainathan, Shafir, & Zhao, 2013, p. 980)

Children burdened by poverty are more likely than their wealthier peers to suffer from limited mental functions affecting language acquisition, executive functioning, memory, and attention skills. They have an increased risk of developing into adults who have a cognitive impairment, and poorer physical health. Adults who experience significant deprivation or social disadvantage also show an increased risk of dementia, psychiatric disorders, and reduced cognitive abilities (Butterworth, Cherbuin, Sachdev, Anstey, 2012).

While it is widely asserted that poverty can negatively impact both the volume of parts of the brain and cognitive function, and it is not yet known whether the neurological damage caused by exposure to hardship can be fully reversed (Butterworth, Cherbuin, Sachdev, & Anstey, 2012).

The neurological impacts of poverty affecting decision-making, outlook, and stress levels can have deleterious effects on children's physical health and safety, too. Many low-SES children are exposed to exploitative sexual situations, fetal alcohol syndrome, violence, and limited supervision (Lineburg & Gearhart, 2013). They are less likely to have access to healthy, nutritious food and health care resources, and the chronic stress to which they are exposed can make them more susceptible to illness (Guthrie, Butler, Ward, 2009). Even a family successfully managing on an extremely low income may have children unwittingly exposed to toxins because of their geographic location, as affordable housing is more likely to be located in industrial or environmentally unhealthy areas (Jensen, 2009; Shanks & Robinson, 2013).

Children living in poverty are, as a result of their circumstances, also less likely to have books at home, to seek emotional support from adults, or to have supportive networks as compared to higher-SES children (Jensen, 2009).

What Promotes Poverty?

"[W]e can identify six types of poverty: situational, generational, absolute, relative, urban, and rural" (Jensen, 2009, p. 6). When left unaddressed, many symptoms of poverty result in self-perpetuating outcomes, regardless of type. Despite this, the more insightful answer to the question of what promotes poverty is: *we all do*. In "Understanding Poverty in the Classroom: Changing Perceptions for Student Success," author Beth Lindsay Templeton cites Dr. Phil Bartle's five main factors that promote poverty: *ignorance, disease, apathy, dishonesty*, and *dependency*. What's important, she notes, about these five factors is that they are perpetuated across all socioeconomic levels, not merely by those who find themselves most disadvantaged. In highlighting the ways that ignorance (blaming people for being poor), disease (two-tiered health care systems), apathy (a lack of effort in supporting systemic

change), dishonesty (not following through on a stated willingness to help others, or speaking with disdain about someone who is socioeconomically disadvantaged), and dependency (offering someone fish instead of teaching them to fish, to paraphrase the old parable) are attributes many privileged people exhibit that perpetuate poverty, she situates the onus squarely on all of society to address the wicked problem of systemic poverty (Templeton, 2011, p. 47-50). It could be argued that those who are most privileged in society are critically poised to make change, by virtue of their social status and advantage. That we all contribute to this endless feedback loop perpetuating economic disparity is a key aspect of what makes poverty a wicked problem evading a clear definition or single solution.

There are staggering statistics showing the disparity of academic achievement between low-SES children and their middle-class counterparts. Lineburg & Gearheart (2013) state:

> "... a prosperous life has always been understood to begin with high-school graduation. Academic success is often measured by degrees earned, and statistical evidence clearly demonstrates that employment rates and income increase with degrees earned (Bureau of Labor Statistics, 2012). Although earning a high-school diploma does not guarantee financial stability, failing to achieve this first tier of academic success overwhelmingly correlates with living in poverty." (p. xix)

While statistically US schools score lower on academic achievement as compared to many industrialized nations, those numbers change when low-SES children are removed from the rankings. So much so, that the US lands the top spot internationally in academic achievement when only middle- and high-SES children's academic standings are factored in (Krashen, 2011).

Perhaps this can be partially attributed to the cyclical nature of systemic poverty, or the 'feedback loop' reinforcing it (Haushofer & Fehr, 2014). In 2010 in the US, 74% of children raised by parents with no high school diploma lived in poverty, as compared to only 16% of those whose parents had some college education or more (Templeton, 2011). Children raised in poverty are more likely to live in poverty as adults, and earn lower wages as compared to their peers who grew up in more advantageous circumstances (Corcoran & Chaudry, 1997; Hauser, 1997; Peters & Mullis, 1997; Vartanian, 1999; in Shanks & Robinson, 2013). Black Americans who grow up poor are five times more likely to remain poor in adulthood as compared to their white counterparts (Corcoran & Matsudaira, 2005; in Shanks & Robinson, 2013).

In "The Paradox of Poverty Narratives: Educators Struggling with Children Left Behind," author Gerstl-Pepin (2006) claims that "[i]f as a society we truly want to address the issue of children being left behind, we need to expand how inequities are described and acknowledge that the reason many children come to school unprepared is related to economic and cultural inequities" (p. 159). The next section of the literature review provides an overview of some of the recommended best practices for teaching low-SES students to help educators and students recognize and overcome systemic inequities.

3.4 Socioeconomic Status + Schooling

> "...lower school-level SES has been linked to lower levels of student achievement (Konstantopoulos 2006; Lee and Bryk 1989; Young 1998) and other behavioral measures, including risk of drop-out (Goldschmidt and Wang 1999), victimization (Gottfredson 2001), alcohol use and substance use (Pearson et al. 2006), and a lower sense of community (Vieno et al. 2005)" (Chen & Vazsonyi, 2013, p. 69).

In Canada and the US, the term *achievement gap* is used widely by education sectors and the media to highlight the discrepancies between achievement levels of students of differing socioeconomic status. The use of the term has come under some criticism for the way it shifts the focus away from systemic inequities in education, and onto the gap itself (Berliner, 2009). This data-based 'gap' becomes a target for elimination, sometimes at the expense of addressing the sources of the problem: systemic inequities and systemic poverty.

In public education, we are faced with simultaneous challenges when teaching socioeconomically disadvantaged kids: the first is to effectively support and teach all students equitably so that they might experience individual success in the present; the second is to grow our understanding of the larger role pedagogy actually plays in helping mitigate or perpetuate poverty in the long term. Put simply, we need to figure out how to support kids right now, but also look for new ways to structure schooling that, over time, will more successfully break cycles of systemic poverty and inequity. Both are seen as cultural imperatives, as there is "a long held belief that the public education system alone is responsible for achievement gaps between children living in poverty and children from more

affluent families" (Gerstl-Pepin, 2006, p. 144). People have come to understand school as key to 'solving' poverty, and believe that if we simply provide every student with access to the same skills, knowledge, and resources that all children will grow to become fully capable, financially independent adults later in life. This equal access is referred to as "equality of opportunity" (Gerstl-Pepin, 2006, p. 149).

Simply matching resources across schools, as equality of opportunity suggests, or strategically pushing students to excel on standardized tests, often does not sufficiently address the range of out-of-school factors (OSFs) faced by students today (Berliner, 2009), and as such will not yield significant shifts in levels of poverty in the future. Acknowledging how OSFs impact student success helps highlight how a child's experience of school is but one of a complex array of experiences that will shape that child over time. If OSFs play a key role in influencing student success in school then how can we, as educators, actually make a significant difference beyond the ways we already do? Is there room to increase the 10-20% variable in academic outcomes between effective and ineffective teaching, even though OSFs account for approximately 60% of the differences in achievement between low-SES and high-SES students (Morselli, 2013)? Is there more we can do, pedagogically, to help mediate the OSFs that impair our students' successes?

While equality of opportunity may appear to make sense on the surface, it's a narrow view that fails to recognize the complex, nuanced factors that impact low-SES students' relationships to education. Furthermore, it puts tremendous pressure on the education system to singularly solve the wicked problem of systemic poverty. Moving away from equality of opportunity as a solution does not mean ignoring education systems as sites for potential change, however. It's the nature of the interventions that needs to be addressed.

In the literature on poverty and schooling, I identified four key areas where interventions typically take place, I call them: *educator mindset, strategic teaching, resource allocation*, and *OSF mitigation*. Most interventions currently being used–successful or not–fall into one of these four categories.

Educator Mindset

"Brains are designed to reflect the environments they're in, not rise above them. If we want our students to change, we must change ourselves and the environments students spend time in every day" (Jensen, 2009, p. 46). Jensen's assertion that it is crucial we analyze the mindset and attitude of educators when teaching low-SES children I'll call the *educator mindset*. Educator mindset describes how people working in education approach their work: not what they do concretely, but how they orient themselves to their work and to the various stakeholders in education. The word 'mindset,' in this case, refers to the conscious decision an educator is empowered to make with regard to their relationship to their work and to their school community. It could be understood as encompassing popular understandings of both mindfulness and metacognition, described as the ability to reflect on oneself, and the ability to think about one's thinking, respectively.

According to the literature, an educator must re-examine their mindset to be best prepared to work with low-SES students. The need for this metacognitive process arises from the recognition that educators are, by upbringing and/or by virtue of their work, middle-class (Berliner, 2009). This disparity in sociocultural experiences between low-SES students and middle-class educators must be acknowledged so that educators can help prevent the

reinforcement of social inequalities, and instead work to eliminate them (Machtinger, 2007). The very fact that middle-class values are upheld and perpetuated in our school systems is part of what makes school inequitable and inaccessible to many of our low-SES students, making "wealthier students [...] more successful in schools because school curricula reflect middle-class norms about what counts as knowledge (Apple, 2004; in Gerstl-Pepin, 2006, p. 145)". By focusing on only middle-class values, educators obstruct their opportunity to recognize the strengths low-SES students bring to school that may look different from those of their more advantaged peers, thereby further limiting opportunities to improve their teaching (Templeton, 2011). In the same way educators expect students to arrive at school with an open mind, so too must educators embrace an openness to difference and a willingness to change (Templeton, 2011). As such, an empathic engagement with students is crucial, as it forces us to adopt what might be an unfamiliar perspective (that of a low-SES student) and learn from it (Sommers, 2011). Educators tempted to 'help' low-SES students by merely giving them access to a middle-class curricula are perpetuating a 'deficit model' that promotes the stigmatization of those living in poverty by hierarchizing certain groups over others. Instead, educators need to meet students where they are in their learning development (Lineburg & Gearheart, 2013) and design programming that is 'culturally responsive' (Machtinger, 2007, p. 5). This doesn't mean further depriving low-SES students of enrichment opportunities to which higher-SES students may have access (Jensen, 2009), but does mean educators need to be aware of class biases to avoid designing programming that alienates low-SES children while perpetuating socioeconomic inequities.

Part of evolving one's educator mindset to work with low-SES students means committing to developing 'relational trust' between administrators, faculty, students, and community

members (Machtinger, 2007, p. 4). An undeveloped educator mindset in this regard might be hard to identify at first. Here is an example illustrating this shortcoming:

> "A poverty mindset can infiltrate the classroom and instigate or mask destructive and self-defeating behaviours that frustrate teachers, whose efforts to eliminate them often fail. Students sense their frustration and respond with resentment. The child labels the teacher insensitive and uncaring. The teacher accuses the student of disrespect and a nasty attitude" (Rawlinson, 2011, p. xv).

In this case, Rawlinson begins by describing a student's struggles with the conventions of the classroom, as a result of their 'poverty mindset,' which refers to differences caused by conditions of poverty, similar to those described in the preceding section. By the end of the description, however, another element is clear: the teacher has accused the student of having behaviour issues, instead of recognizing the conditions under which the student is operating. The teacher, too, has a 'poverty mindset': a prejudiced view that has limited their own understanding and appreciation of that student. The student has simply arrived at the classroom with a host of OSFs that inhibit their engagement with the teacher's programming. I have witnessed in my own practice the teacher-student relationship escalating to one of accusations, mutual distrust, and misunderstanding. In the above scenario, a teacher with a more developed mindset for working with low-SES students might have identified from the outset the host of factors affecting the student, and worked to build a trusting relationship that begins with empathy. In a best-case scenario, a teacher with an evolved mindset will make building positive relationships with all students a cornerstone of their work, and work to provide "strong relationship support" (Jensen, 2009, p. 87). Part of this means minimizing punitive measures, and avoiding student exclusion (Gerstl-Pepin, 2006). It also means

recognizing how some of the traditional aspects of school environments are alienating, and that schools can be designed to feel less punitive and prison-like (eliminating harsh bells, authoritarian approaches, and extensive homework that is not meaningful), and instead be more supportive of positive outlets for stress and excess energy (provide kinaesthetic learning activities, drama and other arts, 'maker' activities, and cooperative approaches to learning) (Jensen, 2009).

In leadership roles, administrators must be willing to take the risk of instigating visionary change (Lineburg & Gearheart, 2013.) Teachers, too, need permission to make 'errors of enthusiasm,' that is, they need support and opportunities to break away from the status quo and try new things (Jensen, 2009, p. 100). At the heart of the well-developed educator mindset is a commitment to adaptability (Lineburg & Gearhart, 2013), and to the creation of a "safe, stable, stimulating, and responsive" learning environment for every child (Shanks & Robinson, 2013, p. 3).

Strategic Teaching

Educators often talk about 'teaching strategies,' a noun that has come to mean simply the 'things you do' as a teacher. Reversing the words to form the phrase 'strategic teaching' creates an active term that emphasizes that the act of teaching involves strategy, or a specific plan of action of how to meet the learning needs and goals of low-SES students. With a progressive mindset in place, an educator is ready to work strategically to better meet the needs of low-SES students.

When working with low-SES students, strategic teaching means designing activities and lessons that encourage optimism and hope, as "[h]opeful kids try harder, persist longer, and ultimately get better grades" (Jensen, 2009, p. 113). They also need inspiration (Lineburg & Gearheart, 2013), and to be introduced to what "first-rate" work looks like, as they may only be familiar with "second-rate" things (Rawlinson, 2011. P. 15). They need to be taught step-by-step processes, patterns, and organizational skills (Rawlinson, 2011), via a "rigorous curriculum with meaningful homework and assessment" (Levin, Weiner; Resnick; in Machtinger, 2007, p. 4).

Strategic teaching also means taking students outside of their typical experiences and environments rather than simply offering assistance that perpetuates the status quo (Yirka, 2012): this might mean extra field trips, and providing access to enrichment opportunities typical of higher-SES children such as music lessons, technology workshops, athletics training, and dance classes (Jensen, 2009).

In one Hawaiian classroom, achievement rose when the teacher modified their planning to include small-group learning. This mode of engagement felt familiar to the students as it matched their cultural experience at home, where they were accustomed to self-directed play amongst siblings (Phalet, Andriessen, & Lens, 2004). Adapting classroom approaches to feel more familiar to low-SES students may be an important part of engaging them. At the same time, activities should foster 'fluid intelligence,' which is the ability to quickly adapt one's way of thinking and reacting to different situations (Jensen, 2009, p. 53). This kind of adaptive thinking builds resilience.

Moving away from 'drill and kill' approaches to teaching is crucial, according to Jensen (2009, p. 97). Instead, educators should strategize so that their teaching is centred on student engagement (Jensen, 2009; Rawlinson, 2011). "Doing the same thing over and over and expecting a different result is a recipe for failure. Your school will get results only when you and your staff shift your collective mind-set [...]. Stop thinking remediation and start thinking enrichment" (Jensen, 2009, p. 94).

Resource Allocation

Though beyond the scope of most classroom teachers, the process by which school resources are assigned and allocated is a crucial part of improving the scholastic experience of children living in conditions of poverty. Administrators with a progressive educator mindset will recognize that resource allocation needs to be done judiciously and always with an eye to equity (Machtinger, 2007). Currently, funding for low-SES schools in the US is lower than other schools, and teachers tend to be less experienced or not expert in the subject area to which they've been assigned (Jensen, 2009). In Canada, the Toronto District School Board has identified over 150 of their almost 600 schools that fall lowest on the socioeconomic spectrum. These identified schools comprise the Model Schools for Inner Cities list, to which the Board allocates additional funding and resources, in an attempt to close the 'opportunity gap' (*Model Schools for Inner Cities: Initiatives*, n.d.). The following describes some of the areas where resources might be allocated to improve outcomes for low-SES students:

- Lower student-teacher ratios, because it increases academic success and self-esteem (Jensen, 2009).

- Provide professional development to help teachers 'unpack' their middle-class lens (Payne; in Gerstl-Pepin, 2006, p. 151).
- Combine "streams of evidence from biology and neuroscience" with conversations about "promising interventions" to improve teaching (Shanks & Robinson, 2013, p. 27). This means looking to new psychological domains to inform the development of evidence-based strategies and programs.
- Spend money to support in-school programs that give students ample access to teachers, counsellors, and healthy food (Rawlinson, 2011).

OSF mitigation

Despite the best of efforts made in the classroom, an educator alone cannot mitigate all of the out-of-school factors experienced by low-SES students. As such, schools must also consider allocating resources to programs that provide opportunities to students and their family members to counteract some of the day-to-day limitations imposed by conditions of poverty, especially those impacting overall health. Those already being used successfully in some schools include on-site physicians, partnerships with pharmacies for medication access, dentist visits to schools, providing information to caregivers of available resources, offering free tutoring, and providing professional development opportunities for staff to help them better appreciate the health issues faced by students living in poverty (Jensen, 2009). Food programs are also essential to ensure healthy nutrition (Berliner, 2009). There is also a direct correlation between academic success and access to books, so ample opportunities to access reading material must be available to low-SES students and their families (Krashen, 2011). Offering academic programs during the summer can also help minimize losses in learning that happen during this break (Berliner, 2009).

While schools are uniquely poised in communities to offer programs and opportunities to young people and their families to help break cycles of poverty (Lineburg & Gearheart, 2013), they have not yet solved the wicked problem of poverty. So long as systemic poverty persists, there exist innumerable opportunities to further develop programs and resources to help shift children toward healthier, more prosperous futures. The 'achievement gap' will narrow when more "programs [are put] in place to address the crippling poverty that obstructs student learning" (McNeely, 2012, para. 4).

3.5 Neuroplasticity: Context, Scarcity, Mindset

The preceding sections of this literature review include an overview of the potential impacts of systemic poverty on children in Canada and the US, and highlight some of the recommended best practices for educators working primarily with low-SES children today. This section intends to broaden those descriptions using additional popular literature on scarcity, mindset, and context, to illuminate where there is potential for growth in how we might support our most systemically disadvantaged students. All three areas of investigation seem to relate to Jensen's definition of neuroplasticity[4], in that they each aim to expose the damaging impacts of stereotypes and assumptions of 'innateness', and instead underscore how our brains can, and do, change with experience. While these insights have obvious implications for students who may feel trapped or limited by their experiences of poverty, they have the corollary benefit of informing the educator mindset, as they apply to all people. In short, awareness of neuroplasticity for both educators and students has the potential to reverse negative self-perceptions and perceptions of others, and promote positive outlooks and outcomes.

[4] *"Neuroplasticity* is the quality that allows region-specific changes to occur in the brain as a result of experience. When the experience is narrow and specific, such as an accident resulting in head trauma, you get narrow, specific changes, whereas broader experiences–such as exercise or maturation–result in more global changes. Research has shown that our parietal, frontal, and temporal lobes are all receptive to specific stimuli that cause measurable neural changes" (Jensen, 2009, p. 47).

Context

In his book "Situations Matter," author Sam Sommers sets out to heighten the reader's awareness of the degree to which we are influenced by the situations in which we find ourselves, in order to make situations less invisible (Sommers, 2011). As educators, we can fall into the trap of taking for granted the institutions we work for and in, failing to appreciate the degree to which the contexts of school or of living in poverty, for instance, can influence our actions, including the decisions we make and how we treat people. Sommers' more holistic view of our relationships to ourselves, other people, and institutions also reveals that the degree to which we are each complicit in maintaining the systems of which we are a part, including systems of education. By ignoring the context that is school, we perpetuate both its shortcomings and its benefits.

Sommers begins by emphasizing that in Canada and the US, mainstream society is focused on the individual. As a result, we tend to focus on and celebrate our 'uniqueness' at the expense of recognizing the system or puzzle within which we are merely a piece. He emphasizes that all of the interconnected aspects of a society actually dictate, to a certain extent, who we are and how we behave; that we are, to some degree, unknowingly at the mercy of the influence of our surroundings. We have a tendency to overlook "the background" in favour of focusing what is in our immediate field of vision. This immediacy informs our judgment, but is a "shallow focus" that doesn't take into account the larger context within which something or someone is situated. In his research, he posits that "culture is a teacher," offering both "explicit instruction and more subtle reminders" about how we should think about ourselves (Sommers, 2011, p. 142).

Perhaps the most significant implications for this project are in how Sommers' research might relate to self-perceptions and educator perceptions of low-SES children. Sommers emphasizes that in Canadian and American society, we tend to compare and align ourselves with others whom we feel are similar to us, as a way of developing and maintaining our self-concept (2011). While Sommers does not delve into the issue of systemic poverty, he does use examples of other ways in which people are marginalized or treated inequitably. The greatest significance for *Foresight for Every Kid* lies in what he shared about context and gender.

Sommers doesn't dispute that there may be a few fundamental correlations between our behaviours and the sex to which we're physically assigned at birth. He does state, however, that we likely overemphasize this differentiation and that, in reality, much of how we see ourselves in relation to our physical sex or gender presentation may be a result of contextual factors. For instance, he cites an example where women scored lower on math tests when they were reminded of either a gender stereotype that equates math excellence with masculinity, or where they were put into physically demeaning situations prior to the test. In both cases, women's scores were lower than when they were instead told that the test was designed to be fair to both men and women. In fact, when the women were told the test was designed to be gender-fair, women scored equally high as men. In all cases, the test was exactly the same. His claim is that the impact of contexts and the subtle and sometimes not-so-subtle messages we are sent within them (and that we send ourselves) deeply influence outcomes (Sommers, 2011). If our sense of potential and success is deeply affected by stereotyping messages about sex and gender, then might there be similar impacts for people living in poverty? Might the learned helplessness described by Jensen earlier in this review

be a by-product of these same kinds of contextual influences? The potential for educators to work around these situational limitations might be great.

To further highlight the discrepancy between how we treat boys and girls, Sommers mentions the way teachers often greet students with, “Good morning boys and girls,” or describe classroom progress in relation to gender through statements that contrast the good work girls are doing versus that of boys or vice-versa, for example. He claims that defining the classroom divisively by gender is as strange as doing it by race or ethnicity, though we are so accustomed to it we barely notice. If we unknowingly contribute to the perpetuation of gender stereotypes merely in the ways we greet students, might there not be other ways in which we reinforce stereotypes in the context of school, perhaps those of low-SES students? This observation might further confirm the importance of a conscious, thoughtful educator mindset.

In addition to highlighting some of the ways we unconsciously perpetuate gender stereotypes, Sommers offers a suggestion as to how we might begin to change these patterns. He uses a teacher as an example, urging them to share with their students that there is no difference between boys’ and girls’ inherent ability to achieve in math, for instance. Again, for the purposes of this project, I am interested in how these actions translate into the area of schooling low-SES children, and specifically for how educators’ middle-class values and perspectives may be unintentionally alienating low-SES students from school, or otherwise limiting their learning potential.

Scarcity

> "More empirical research, we believe, should be directed toward testing the effectiveness of behaviorally motivated antipoverty policies [...]. The good news might be that simple and inexpensive policies have substantial impact. The cautionary news is that policymakers may need to attend to nuances they often are not trained to attend to: subtle distinctions that from a normative perspective may seem immaterial can have large implications for a policy's eventual success" (Bertrand, Mullainathan, & Shafir, 2004, p. 423).

Here again is evidence that looking at situations outside of a 'normative perspective' may be important to better developing anti-poverty measures. What is this 'normative perspective'? Might it be the middle-class lens through which we teach? Could the kinds of changes needed to which these authors refer relate to the mindset of the educator? These findings are encouraging in light of the hypothesis stated for *Foresight for Every Kid*.

The excerpt cited above is from a research paper focusing on behavioural economics in relation to poverty. One aspect of the paper explores the relationship between context and banking behaviours. The authors assert that our self-identity can change depending on the situation we're in, and that our decision-making can change along with those contextual shifts. The authors contend that a person living in poverty may not recognize in their identity as 'welfare participant,' for example, the inclination to use a bank. They name these shifting self-perceptions 'identity salience,' and suggest we develop policies and programs that engage aspects of people's identities that are more likely to take part in programs and opportunities. While the authors don't mention low-SES students' relationship to schooling, might we consider this approach when developing pedagogy for working with low-SES

children? They authors claim that it is actually “small situational barriers” (p. 420) that restrict (in the case of their example) the opening of a bank account for a person whose identity salience does not seem to correlate with that action. In the case of education, the experience of a low-SES student and the small but significant barriers presented by schooling as a result of cognitive, emotional, or social deficits resulting from poverty might feel greater than many educators can imagine.

While low-SES students are living with financial scarcity, we know that this kind of scarcity is linked to other forms of lack, including scarcity of food, shelter, and relationships, to name but a few. But what about lack of time? Scarcity of time can create a ‘focus dividend,’ or a tendency to make the most out of something when time appears limited (Mullainathan & Shafir, 2013). While this can play out as taking full advantage of an opportunity in the moment, it can also have negative consequences, described as ‘tunnelling’ in a previous section (Mullainathan & Shafir, 2013). Self-control can be impacted by this tunnelling in poverty. In “Scarcity: Why having too little means so much,” Mullainathan and Shafir reveal that self-control is impacted by “how we weigh the future” (2013, p. 53). Scarcity forces us to tunnel our focus toward that which is scarce, and often results in the decision to take immediate gratification over long-term gain. The concern for low-SES students is that a poverty mindset might create a time-oriented focus dividend that privileges the present at the expense of the future, which has severe implications for schooling where, as Jensen states, one of the key factors affecting school success is “the ability and motivation to defer gratification and make a sustained effort to meet long-term goals” (2009, p. 55). Furthermore, Mullainathan and Shafir state that self-control and the ability to defer gratification in times of scarcity is impacted by executive control. In a previous section, I described how executive function–the part of the brain that manages executive control–can

be adversely affected by poverty (Mani, Mullainathan, Shafir, & Zhao, 2013; Butterworth, Cherbuin, Sachdev, Anstey, 2012). I'll explore the connections between scarcity and deferred gratification in more detail the section on time perspective in this literature review.

Mindset

While Shah, Mullainathan, and Shafir assert that resource scarcity, such as poverty, can lead to the development of a particular mindset that changes "how people look at problems and make decisions" (2012, p. 682), Carol Dweck's popular book on psychology titled "Mindset: The new psychology of success" reveals that our mindsets are, in fact, ever-changeable. At the time of writing this literature review, Dweck's 2006 book is number one on amazon.com's list of books on applied psychology, number two on its list of books on personal transformation and, perhaps surprisingly, number one on its list of books on investing. Its appeal may lie in the way it debunks myths about absolute intelligence, thereby making people aware of each individual's cognitive potential to learn and grow, in spite of their circumstances. For the purposes of *Foresight for Every Kid*, Dweck's book offers compelling insights into the potential for educators to expand their mindset when teaching low-SES students, so that low-SES students in turn, might shift the kinds of damaging mindsets they often hold, brought on by the varied challenges associated with living in conditions of poverty.

Dweck's research into the psychology of our mindsets indicates that our brains contain a wealth of intelligence potential, regardless of the degree to which we engage our mental resources at any given time. She suggests that in many cases, we grossly underestimate our students' intelligence and underserve them as a result (2006). In this case, it is the teacher's

mindset that views their student's innate potential as limited that contributes to the maintenance of inequitable schooling for many kids. This limiting mindset is called a *fixed mindset* (2006).

In addition to the fixed mindset, Dweck's research focuses on what she refers to as the *growth mindset*. The concept underlying both mindsets is deceptively simple: those of us with fixed mindsets believe that intelligence is fixed or determined innately, while those of us with growth mindsets believe in the limitless potential of our brains to continually change and develop, through experience. Fixed mindset people believe 'you are who you are,' and growth mindset people see themselves as 'always becoming' (Dweck, 2006, p. 25). We can be a bit of both depending on the situation, but overall one mindset will tend to dominate the lens through which we see ourselves, and others.

The implications of these two mindsets are almost diametrically opposed. Dweck explains that for those of us with a primarily fixed mindset, we have a tendency to be intimidated by challenging situations, and may balk at trying something new. Fear of failure is at the root of the fixed mindset, and often those of us who live with this perspective will choose not to pursue something unless we're fairly certain we'll be successful at it. A person with a fixed mindset is preoccupied with preserving their existing identity as it feels predetermined, a kind of pivot point against which we constantly evaluate ourselves, and that we also use to imagine how we're being perceived by others. A person with a fixed mindset wants to hide vulnerability and reveal only success or reward, which can fuel their tendency to blame on others that which is perceived as personal failure. As a result, it can inhibit one's ability to take responsibility for their actions for fear of appearing weak or diminished in intelligence or ability. According to Dweck, this way of understanding oneself is rooted in older

psychological theory that believed in the notion of fixed intelligence, or the idea that we are born with a predetermined capacity for intelligence and that this capacity cannot be altered. A manifestation of the fixed mindset in schools is the example of a student who participates only with minimal effort. Because school is a site of evaluation, where students understand that they are being measured against a standard to determine they success in that context, they may, as a result of their fixed mindset, refuse to participate in that structure. While this may come across as the student defying authority, or 'shooting themselves in the foot,' it can actually be a result of a fixed mindset that fears feeling judged, and fears possible failure. As such, the fixed mindset can hinder learning and academic success.

In contrast to the fixed mindset, those of us with a growth mindset are less afraid of failure, and recognize that from it can come important growth and deep learning. This perspective is aligned with contemporary psychological theory that claims our brains can, and do, continue to grow and change depending on how open we are to developing them, and that ongoing learning can increase IQ and actually form new neural pathways (Jensen, 2009, p. 59). Those of us with a growth mindset attempt to embrace change, tackle new challenges, and look for ways to learn from situations. In the case of a growth mindset, notions of 'success' and 'failure' take on a different meaning, less loaded with personal judgment and more focused on personal learning and growth.

To further investigate the influence of mindset in school settings, Dweck worked with a group of students to first determine their individual mindsets: growth or fixed. She then tracked each student's progress through their two years of junior high as their learning became more challenging, rote, and stringently evaluated. On average, those students identified as having a fixed mindset were almost immediately less academically successful in the face of greater

scholastic challenges than they had been prior to junior high, and their achievement continued to decline of the course of the two years. The students identified as having a growth mindset, however, showed an increase in academic achievement over the same time period. These results were observed in spite of the external factors of puberty onset and the increased responsibilities faced by adolescents as they enter young adulthood.

In Jensen's 2009 book, he corroborates Dweck's findings by describing how brains change, for better and for worse. He states that every new opportunity for learning – whether prolonged or fleeting – changes our brains. These changes can come about as a result of negative or positive factors, and will result in corresponding effects. He emphasizes that brains are designed to change and adapt to stimuli (Jensen, 2009). Both Dweck and Jensen's assertions signal the potential for educators to bring about positive change, merely by helping students develop positive mindsets, while changing their educator mindsets, too.

> "More than half of our society belongs to a negatively stereotyped group. […] Give them the gift of the growth mindset. Create an environment that teaches the growth mindset to the adults and children in your life, especially the ones who are targets of negative stereotypes. Even when the negative label comes along, they'll remain in charge of their learning." (Dweck, 2006).

In this excerpt, Dweck, like Sommers, also emphasizes the significant damage that can be caused by stereotypes. She claims that stereotypes are evocative of ideas about the self, and that when we are faced with them, we internalize their messages and scrutinize ourselves in comparison, out of fear of confirming the stereotype. The key here is that this subconscious preoccupation actually limits us in other ways: it consumes "mental power" and leaves us with fewer cognitive resources to "do [our] best" in that moment (Dweck, 2006, p. 75). While

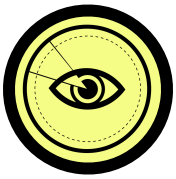
Dweck does not use the term 'tunnelling,' the similarities between the implications of Dweck's observations of the neurological impacts of stereotyping and the phenomenon of 'tunnelling' in scarcity research is also striking.

Furthermore, while she doesn't use the term 'equity,' Dweck does touch on the contrast between where different people start out versus where they have the potential to end up, which has specific implications for children living in conditions of poverty. She claims that while each of us may have "different temperaments and different aptitudes" (here lies the parallel to equity: that we don't each set out from the same starting line because of sociocultural factors that limit or privilege us), that we do each have the inherent capacity to learn and become adept, regardless of where we begin (Dweck, 2006, p. 5). Her work posits that it's the resilience that accompanies a growth mindset that enables people to maximize the realization of their intelligence potential. People with a fixed mindset, on the other hand, will find it more challenging to fully realize their potential for growth because the fear of failure associated with this mindset creates a kind of "crippling inability" to venture outside of one's comfort zone; the fixed mindset "seems to rob them of their coping resources" (Dweck, 2006, p. 39). As such, designing educational programming for children that helps develop resilience is one part of how to develop a growth mindset in students.

In addition to her findings on the power of mindset, Dweck repeatedly underscores the dangers and limitations of primarily basing our academic assessment data on one-time evaluative measures, such as standardized tests. A student's result on a standardized test, she claims, offers little more than a measurement of that student's achievement at that particular task on that particular day. The result is not representative of that student's ability, nor is it indicative of the student's likelihood of success in the future. According to Dweck,

such tests merely tell us “where a student is, but they don’t tell you where a student could end up” (2006, p. 66). Despite this, the culture of school and the power of what is implied in a test score have a strong influence on student perceptions of self, and of their future (Dweck, 2006).

Perhaps of greatest significance for the research behind *Foresight for Every Kid* is the determination that almost every person is capable of learning what any other person can learn, if they are provided with the “appropriate prior and current conditions of learning” (Bloom; in Dweck, 2006, p. 66-67). Through the synthesis and analysis of the findings from this literature review, I will draw together evidence from throughout the readings that corroborates this view, and highlight how educators might create new kinds of conditions for learning that foster a growth mindset, specifically when working with low-SES students.



3.6 Time Perspective Theory

The research question at the heart of *Foresight for Every Kid* speculates as to the potential in futures studies to help improve the academic success of low-SES students. The challenge in this project was to justify, by various means, this potential. Doing so meant reviewing literature from diverse disciplines and attempting to find promising links between them, either supporting this project's hypothesis, or disproving it. By far the most challenging and rewarding area of inquiry was that of time perspective theory.

The significance of the research into time perspective for *Foresight for Every Kid* is in how it links sociocultural successes and obstacles to whether a person is primarily past, present, or future-oriented. The implications of time perspective theory for low-SES students are substantial, and there has been some work done specifically in this area, which I will touch on in this section. Time perspective theorists have also delved into how our ideas of the past, present, and future relate to family, to our ability to set goals and defer gratification, to social stratification, to motivation, and to educational settings. Each of these will also be highlighted in this section. First, though, I will provide working definitions of the key terms most relevant to this area of inquiry.

Our individual *time perspective* is a psychological construct comprising a series of cognitive processes that allow us to conceptually differentiate between past, present, and future (Zimbardo & Boyd, 1999). It is the means by which we are able think about, imagine, and

understand time as a continuum that extends from the past, through the present, and into the future. We each have a tendency to privilege one of these time perspectives in how we view ourselves, and the world.

The term *future time perspective*, or FTP as it's referred to in much of the literature, is sometimes used interchangeably with future orientation, though the two are quite distinct. FTP was defined by Wallace relatively early on as "the timing and ordering of personalized future events" (in O'Rand & Ellis, 1974, p. 53). It has grown to mean one's frame of time yet to come within which one might imagine themselves in relation to events or objects in the near or distant future (Peetsma, 2000). The extent to which one can imagine these events or objects in the future, that is, how 'far' into the future they can conceive of them, is referred to as a person's *extension*. With this definition, a person with a limited FTP would have a relatively short extension, meaning they would not be able to imagine events or objects that might happen further into the future, as compared to someone with a longer extension. Research into FTP has focused in part on what influences the degree to which one is able to extend their thoughts and ideas into an imagined future (Gjesme, 1975; Lens, 1986; Winnubst, 1975; in Peetsma, 1991). It is believed that our individual FTP grows out of our process of motivational goal setting (Phalet, Andriessen, & Lens, 2004), and that FTP and goal-setting are, to varying degrees, interdependent: setting motivational goals extends our FTP (makes our extension project further into the future) and, as a result, strengthens our desire to pursue our goals (Lens, 1986; Nuttin & Lens, 1985; in Phalet, Andriessen, & Lens, 2004).

One's future orientation, on the other hand, is comprised of "three major psychological processes: motivation, planning, and evaluation" (Nurmi, 1991, p. 2). It is a comparative

process in which a person considers future goals and ideas in relation to present-day choices and situations. A person with a developed future orientation will, when considering their actions, examine their immediate motives and compare them to their goals for the future, resulting in a planning process that will determine possible courses of action considerate of both factors. Their final choice will be made after they have evaluated their likelihood of achieving whatever they've determined are their most salient goals at that time (Nurmi, 1991). Our future orientation, while a cognitive process, is also linked to motivation in how the perceived value or usefulness of a future goal can influence our decision-making, and to our pessimism and optimism about the future (which also influences our decisions in the present) (Nurmi, 1991; Seginer, 2009; Tommsdorff et al., 1982; in Chen & Vazsonyi, 2013). Our degrees of optimism and pessimism about the future are, in turn, often reflective of our degree of hopefulness: those of us more optimistic about the future may feel more hopeful, whereas those with pessimism about what's to come may experience more feelings of hopelessness.

To help illustrate the concepts of future orientation and FTP, I'll share an example. Suppose I considered going to the park today to play with my kids instead of writing this literature review. It feels important to me to be present and involved as a parent–and the park would be especially fun on this summer day–but I also have many other goals, including finishing this project, and finishing my degree. In the process of making my decision, I would weigh the immediate benefits and consequences of the decision against its potential short- and long-term benefits or consequences. Because I have a developed future orientation, I am able to consider these multiple factors simultaneously. How 'far' into the future I'm able to imagine possible outcomes, however, is defined by my FTP. For instance, if my FTP extension were on the shorter side, I might only be able to think about what my thesis supervisor would say in a

couple of days when it turned out I was even more behind schedule, or how my kids would be feeling if I'd said no to their park request. If I my FTP extension were longer, I might be able to project to next year, or further, and imagine what my circumstances might be if I had or hadn't completed my graduate program, and whether having said 'no' to a park trip might have lasting implications for my parenting. In this example, my future orientation refers to my process of considering the future in relation to my goals and decisions, and my FTP is representative of how 'far' I am able to imagine what might lie ahead. Both FTP and future orientation play a part in our cognitive processes of goal-setting and decision-making.

Our FTP and our future orientation work in tandem to strengthen or weaken one another. The more we develop a future orientation through goal-setting and reflection, the more we are likely to grow our extension, and thus our FTP (Phalet, Andriessen, & Lens, 2004). It should be noted that, while future orientation and FTP may be interdependent to varying degrees, it is possible for a person to have a developed FTP (an ability to imagine or conceptualize the future) but a limited future orientation (an ability to consider the future in relation to their own hopes and goals). This distinction will prove important later in this project when considering the value of futures education in relation to developing low-SES students' FTP and future orientation.

Lastly, Zimbardo and Boyd, researchers at the forefront of time perspective theory, claim that no one is born with an FTP (2008). There are, however, environmental conditions that influence how it might develop in each of us. We are more inclined to develop an FTP if we live in a stable family, are educated, have a job, use technology regularly, or have future-oriented role models, to name a few examples (Zimbardo & Boyd, 2008, p. 139-140). In the case of future orientation, its substructures are unknown, though there is some research

offering emerging insights into what factors contribute to its development (Beal, 2011). Regardless of social stratification, however, adults are relatively more future-oriented than younger people (Steinberg, Graham, O'Brien, Woolard, Cauffman, & Banich, 2009). The process of developing an FTP and future orientation, therefore, is in part connected to maturation and cognitive development.

In time perspective research, psychologists describe the varying implications of time perspective for people who may be particularly invested in the past (either positively or negatively), the present (either fatalistically or hedonistically) and the future (this is most commonly discussed singularly, though there are branches of time perspective theory that explore more than one future orientation). While an over-reliance on any single perspective is not recommended, a well-developed future time perspective and future orientation are consistently cited as relatively beneficial (Zimbardo & Boyd; 2008). Conversely, a tendency to see the world primarily through a past-negative or present-fatalistic lens is described as "damaging" (Zimbardo & Boyd, 2008, p. xiv). This literature review provides an introductory overview to help illuminate these assertions.

Having a well-developed future orientation and FTP are associated with positive well-being, the ability to cope and adapt to different situations, and an increased sense of 'perceived control' or agency (Zimbardo & Boyd, 2008, p. 126). People with a high future orientation are also less aggressive, less depressed, more energetic, engage in lower levels of drug and alcohol use, and are more conscientious as compared to those whose primary time perspective is not future-focused (Zimbardo & Boyd, 2008). 'Futures'–the name Zimbardo and Boyd use to describe people with a high degree of future orientation and FTP–are also more likely to be optimistic, set and pursue goals, and engage in exercise (Zimbardo & Boyd,

2008). Morselli's recent work examining the impacts of future orientation in relation to uncertainty, claims that those with an extended FTP are also more likely to engage in pursuits that prioritize personal responsibility and social responsibility, while a shorter extension tends to result in more hedonistic pursuits (2013).

The tendency of optimistic future-oriented people to value goal-setting also increases their sensitivity to the long-term consequences of their present-day choices, and as such these people are seen to have a lower likelihood of engaging in "problem behaviours" that may risk their future (Chen & Vazsonyi, 2013, p. 67). More on this subject will be detailed later in this section, particularly in relation to low-SES students and schooling.

Future-oriented people also tend to be more educated, and more gainfully employed, than those of any other dominant time perspective (Zimbardo & Boyd, 2008). They also carry less debt, are more inclined to save money, and are scrupulous when weighing their decisions of when to work, when to socialize, and when to relax. Future-oriented people also make more money than any group oriented toward a different time perspective (Zimbardo & Boyd, 2008). While 'futures' tend to be more competitive and skilled in negotiations or debates, they are also more likely than any other group to cooperate toward a common goal or for the greater good (Zimbardo & Boyd, 2008). Lastly, those with a developed future orientation and FTP are better equipped to cope with or avoid 'future shock,' or the sudden change brought on by unanticipated or surprising events (Zimbardo & Boyd, 2008, p. 50).

An over-reliance on a future orientation and FTP can have negative repercussions, however. There is evidence that a fixed-mindset person who is future-oriented may become anxious or fearful of failure about an upcoming event and their future orientation may actually motivate

or incite avoidance so as to minimize that failure risk (Greene, DeBacker, 2004). Moreover, Zimbardo and Boyd claim that futures can also prioritize work at the expense of familial and other loving or intimate relationships (2008, p. xvi). Despite these potential shortcomings for future-oriented people, evidence still points to a well-developed future orientation and FTP as the most beneficial dominant time perspective.

In fact, people who focus more on immediate gratification have shown that it actually limits their ability to engage with future goals. If our sense of the future is constrained or inhibited for whatever reasons, we are more inclined to make choices that provide satisfaction or relief in the present (Carstensen in Zimbardo & Boyd, 2008). Making choices that prioritize only present needs reduces one's overall likelihood of prioritizing larger future-oriented pursuits, including education (Zimbardo & Boyd, 2008). People who are past-negative in particular (meaning those whose thoughts and decisions are weighed heavily against past experiences and memories that are negative) exhibit behaviours that are almost diametrically opposed to those with a more future-focused approach: they are generally more aggressive, more anxious, less conscientious, more depressed, and even less friendly (Zimbardo & Boyd, 2008, p. 86-87). People mostly present-oriented tend to adopt this perspective as a result of recent negative events, a limited sense of agency, and a tendency to rely on anger, withdrawal, and helplessness as coping mechanisms (Zimbardo & Boyd, 2008).

The impact of our dominant time perspective on numerous life aspects has been widely studied and found to be extensive. From our health, to our ability to plan and set goals, to our degree of motivation and likelihood of being educated, the majority of research indicates that a strong future orientation and FTP are crucial to achieving best outcomes. While there are some studies that counter these claims (which I will touch upon throughout this review), the

evidence to support the value in being a 'future' is considerable, especially where young people are concerned, given the direct correlation between later adolescence and present-hedonistic attitudes. While present-hedonism is not as damaging a perspective as present-fatalism, it nonetheless prioritizes "pleasure-seeking and living in the moment," which can negatively impact long-term goals (Mello & Worrell, 2006, p. 282-283). Present-oriented perspectives also increase a person's likelihood of younger sexual activity, selling drugs, and the use of weapons (Harris, Duncan, & Boisjoly, 2002; in Mello & Worrell, 2006).

In matters relating to health, there is a positive correlation between health behaviours, future orientation, and FTP. 'Futures' are less likely to engage in sexual behaviours associated with HIV risk (Rothspan & Read, 1996; in Guthrie, Butler, & Ward, 2009), and "smoking, and alcohol and substance abuse" (Keough, Zimbardo, & Boyd, 1999; in Guthrie, Butler, & Ward, 2009, p. 2146). Health outcomes have, in some specific cases, shown to be improved in those with a future orientation and FTP (Guthrie, Butler, & Ward, 2009) though the most significant findings that relate 'futures' and their health is in the way the two correlate with regard to behavioural choices. A developed future orientation and FTP are associated with a higher likelihood of seeking out medical support, tests, and checkups, making healthier food choices, minimizing engagement with unhealthy behaviours such as substance use and abuse, and a decreased likelihood of engaging in risky driving, or physical fights (Zimbardo & Boyd, 2008). As such, future-oriented people are expected to live longer (Zimbardo & Boyd, 2008). In a study with results that contrast the findings above, people with a higher degree of future orientation were not found to have an increased association with positive health behaviours, but–along with present-fatalistic oriented people–were instead found to have higher incidences of positive *self-rated* health as compared to those of other dominant time orientations (Guthrie, Butler, & Ward, 2009).

Well-being, again a self-reported, subjective measure, defies an agreed-upon definition in the English language according to the Center for Disease Control (CDC), but is described by Frey, Deiner, Riff, and Keyes in a CDC document as "the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning" (*Well-being Concepts*, 2013) and is also correlated with optimism, future orientation and future time perspective (Eryilmaz, 2011). Eryilmaz states that "it is important for adolescents [in] high school to have positive future expectation[s] to increase their subjective well-being (2011, p. 209).

Hope, too, is influenced by one's time orientation. Zimbardo and Boyd (2008) state that "being hopeful is part of being future-oriented" (p. 152). Degrees of optimism and pessimism about the future also impact people's outlook (Beal, 2011), and students having a pessimistic orientation toward ideas about the future also exhibit increased hopelessness, especially in schools with an overall positive future climate (Chen, Vazsonyi, 2013). Chen and Vazsonyi also found that youth pessimism about the future was associated with "a greater personal vulnerability for involvement in problem behaviors" (2013, p. 67).

So what are the implications for socioeconomically disadvantaged people in relation to time perspective, and future orientation in particular? "Some, but not all, studies have found that persons of higher SES are more likely to be future-oriented than persons of lower SES" (Corral-Verdugo, Fraijo-Sing, & Pinheiro, 2006; D'Alessio, Guarino, DePascalis, & Zimbardo, 2003; Epel, Bandura, & Zimbardo, 1999; Fuchs, 1982; Lamm, Schmidt, & Trommsdorff, 1976; in Guthrie, Butler, & Ward, 2009, p. 2146). In fact, Guthrie et al. (2009) found that SES was the only sociocultural factor to have a consistently identifiable impact on one's time

perspective. The degree to which one is inclined to live in the present – as is often the case for people living in conditions of poverty – results in a greater likelihood of having lower socioeconomic status (Zimbardo & Boyd, 2008). This inclination toward a present orientation for low-SES people might be attributed to Nurmi's finding that higher-SES adolescents "perceived more opportunities in education and occupation and were able to extend farther into the future than" those with lower-SES (in Beal, 2011, p. 25). Morselli (2013) also states that "the relative insecurity of low incomes, temporary employment and a reliance on state benefits" provide little in the way of "future security" (p. 306). Trommsdorff (1986) claims that "[t]he less social settings allow for the experience of success and social acceptance, the more pessimistic one's future orientation is colored" (p. 131). Given the interconnectedness of systemic poverty with other sociocultural factors such as systemic racism, the valuing of the nuclear family, and citizenship status, consider Greene and DeBacker's (2004) assertion that "...culture not only impacts people's views of what they will be doing and when, but also of who they think they will be in the future" (p. 105). O'Rand and Ellis (1974) found, too, that people with poor performance in their roles also experienced a foreshortened time perspective. In fact, there is evidence across multiple studies that "people's FTPs are shaped by the constraints that their cultural circumstances impose on them" (Greene & DeBacker, 2004). I'm not suggesting here that poverty creates a culture, rather that the dominant cultures in Canada and the US create conditions that impact each resident. Greene and DeBacker also reveal that people's ideas of themselves in the future are deeply influenced by the kinds of expectations they feel others have of them based on sociocultural perceptions of race, ethnicity, and gender (2004). Given the statistics linking higher numbers of racialized people, lone parent families, and recent immigrants to low socioeconomic status in both Canada and the US, one can begin to form a more complex picture of how self-perception, cultural barriers, and time perspective may be intertwined.

Of particular significance to *Foresight for Every Kid* is the reported relationship between socioeconomic status, time perspective, and the extent to which youth are able to meet 'institutionalized role demands' (O'Rand & Ellis, 1974, p. 55). While their investigation is already over forty years old, O'Rand and Ellis' findings are still significant in that they were able to sample a large population of primarily middle-class male college students, and armed forces corpsmen of lower socioeconomic status. In both groups, the participants' FTP extension was found to impact role performance, with a shorter extension having a negative impact. The middle-class students were found to have more 'systematically ordered' conceptions of the future as compared to the corpsmen, though the smaller sample of college students who came from low-SES backgrounds showed 'residues' of their experience of relative economic scarcity, despite college's middle-class climate (O'Rand & Ellis, 1974, p. 53).

While there is a disproportionately high number of socioeconomically disadvantaged recent immigrants as compared to country-born nationals in both Canada and the US, according to Phalet, Andriessen, and Lens (2004) there are conflicting factors impacting recently-immigrated children's time perspectives. One the one hand, many immigrant families arrive in Canada and the US with a high value placed on educational attainment, yet the barriers imposed by systemic discrimination and other sociocultural factors experienced by low-SES immigrant children can negatively impact a student's sense of hope and academic achievement. Adapting to 'western' culture where individual success and competition are valued (and contribute to the rewarding of those with a future orientation) can also become a barrier to those adjusting away from a culture that may have been more family or community oriented, as well as past- or present-focused (Morselli, 2013).

Zimbardo and Boyd (2008) state that "[s]ocial class is both a contributor to and a consequence of time perspective" and that a "[f]uture orientation is a prerequisite for membership in the middle class" (p. 101). Indeed, there are sociocultural conditions present in both the US and Canada that reward future-oriented, and thus middle-class, people. For example, Zimbardo and Boyd (2008) describe the time paradox inherent in our laws and judiciary systems. In Canada and the US, we use the threat and reality of future-oriented prison sentences (if you commit this crime now, we will take time away from your future by putting you in jail) which do little to deter present-oriented people from making mistakes. A future-oriented person, however, would see possible jail time as a threat to their future and this threat would succeed in incentivizing them to avoid committing a crime. If a person's concept or relationship to the idea of the future is limited, they are less likely to feel anything in response to the threat of it being taken away.

Consider, too, the fact that those of us in positions to make decisions regarding policy and laws are future-oriented ourselves, and thereby middle-class (Zimbardo & Boyd, 2008). The outcome of this particular time perspective dominating societal decision-making processes includes social policies and practices that reward those who have a developed future orientation, and fail and punish those who have a more present-oriented perspective–who are also more likely than anyone else to be socioeconomically disadvantaged. Harm-reduction programs that rely on emphasizing future consequences of engaging in present-day harmful behaviours, for instance, are poorly designed for participants who are primarily oriented to the present (Zimbardo & Boyd, 2008). In one example, a time limit of six months was imposed on welfare recipients' receipt of funds, as an incentive to promote changes in behavioural economics. Zimbardo and Boyd (2008) point out that the time perspective of

those in receipt of welfare is already likely to be present-oriented, and a futurized incentive such as a time limit will do little to motivate or change behaviours in those who do not identify in the future much usefulness or salience.

This privileging of future-oriented people in society creates a form of time-perspective discrimination, limiting the voices and opportunities of people who do not strongly identify with the future as a motivator or arbiter in their decision-making processes (Zimbardo & Boyd, 2008). This increases the likelihood of those who are not future-oriented being disadvantaged in society.

This disadvantage has especially dire consequences in schools, and perpetuates academic inequities. In teaching, middle-class, future-oriented educators will cite students' future opportunities or consequences in an effort to motivate or encourage them to engage, participate, and succeed academically. Once again, this approach will resonate only in students with a developed future orientation – meaning primarily middle-class or higher-SES students – who identify in the future an incentive value (Morselli, 2013). Present-oriented students are more likely to be late: in arriving at school, finishing projects, and handing in work. This results in poorer academic performance (Zimbardo & Boyd, 2008).

The relationships between school achievement and time perspective are striking. In one study, participants whose parents had lower levels of education were more likely to be present-fatalistic in perspective, regardless of their own education level, implying that the impacts of low-SES upbringings can be lasting despite people's later experiences (Guthrie, Butler, & Ward, 2009). The same researchers noted that people with more formal education and who were more gainfully employed scored higher on a future time perspective subscale

than those who were more present-oriented or who worked in a 'non-professional' occupation. These results held true regardless of other demographic considerations (Guthrie, Butler, & Ward, 2009). The research team concluded that the acquisition of higher education "can be viewed as a demonstration of a future time perspective" (Guthrie, Butler, & Ward, 2009, p. 2149).

In Nurmi's (1991) article on adolescent perceptions of their futures, parents are cited as having the greatest influence on a young person's long-term goals and decision-making. While peers are typically consulted for short-term decisions, parents "[set] normative standards, [that] affect interests, values, and goals," and as a result, adolescents will often emulate these characteristics as observed in their parents (p. 32). According to Nurmi (1991), parents also model problem-solving strategies and approaches, which are then internalized by the child. In socioeconomically disadvantaged families where a present-oriented time perspective prevails, parental influence may not help a student gain advantage in a school system that privileges a longer-term view. There is, however, a correlation between students with family traditions of long-term planning and thinking and their tendency to set long-term goals (Zimbardo & Boyd, 2008).

Brown and Jones (2004) state that "a strong future orientation [is] an important resilience factor with regard to academic achievement" (p. 267). FTP and the ability to delay gratification form part of the strategies used by students to achieve academic success. In conventional schools, the self-regulation required of students is also mediated in part by their FTP (Bembeneutty & Karabenick, 2004). A student with a long FTP extension is more able to recognize how what they are doing in the classroom today has implications for their future. This present-day recognition of the future value of a task or experience is known as

utility value. The longer a student's FTP extension, the greater their recognition of the utility value of their present-day pursuits (Phalet, Andriessen, & Lens, 2004). An increased appreciation of the utility value of school-based work has also been correlated with increased persistence and academic results (De Volder & Lens, 1982).

Student perceptions of school's utility value for the future is also impacted by their perceptions of overall opportunity in society. Students who feel their societal opportunity is limited will tend to have lower levels of intrinsic motivation for scholastic pursuits than their peers who are hopeful and optimistic about future opportunity. Systemic barriers–like racism, classism, and ableism–affect students who are marginalized by environmental discrimination by limiting their sense of personal opportunity, consequently limiting the perceived utility value of school (Brown & Jones, 2004). This disillusionment can occur regardless of how much the development of future goals is encouraged as a form of motivation. When, however, a learning task is perceived as having a high utility value, students tend to engage with the task more deeply, resulting in higher academic achievement (Phalet, Andriessen, & Lens, 2004).

Of note is the tendency for low-SES students to primarily consider their working life when conceiving of their futures, as opposed to higher-SES students who tend to plan around educational, career, and leisure-related long-term goals. Students with goals built solely on the promise of financial gain or additional accreditation, or those with a minimal relationship to future goals, tend to demonstrate limited levels of motivation, minimal use of strategies in their learning, and less persistence and performance, as compared to their peers with more internally-focused life goals (Nurmi, 1991). "Research suggests that students' imagined personal futures function as roadmaps for their strategic learning (Lens & Vansteenkiste,

2008; Marko & Savickas, 1998; Oyserman, Bybee, Terry, & Hart-Johnson, 2004; in Hilpert, Husman, Stump, Kim, Chung, & Duggan, 2012, p. 229), and that "developing a manageable vision of the future which is connected to present activities is a crucial task for young adults preparing to enter the world of work" (Csikszentmihalyi & Schneider, 2000; Kerpelman & Mosher, 2004; Nurmi, 2005; in Hilpert, Husman, Stump, Kim, Chung, & Duggan, 2012, p. 229).

For students living in conditions of poverty, the list of risk factors associated with their socioeconomic status is longer than that of their higher-SES peers. According to Evans, "[e]ach risk factor in a student's life increases impulsivity and diminishes his or her capacity to defer gratification (in Jensen, 2009, page 27). The ability to delay gratification "is an important strategy that helps learners transform their expectations and beliefs about the future into self-regulated behaviour" (Zimmerman, 2000; in Bembenutty & Karabenick, 2004, p. 53). While a future orientation and the ability to delay gratification are intertwined, it is unclear which predicates the other (Morselli, 2013).

While the varied research on time perspective has revealed numerous links between our orientation to time and other life aspects as described above, many researchers have also made recommendations as to how to begin to use these insights to foster change. Chief among them is the suggestion that extending students' FTP will help improve academic engagement (Phalet, Andriessen, & Lens, 2004), though the methods by which it suggested educators do this include emphasizing the future utility value of tasks, which has been shown to have a deleterious effect on engaging students with a limited orientation to the future. Morselli (2013), on the other hand, argues that we need to acknowledge the ways in which our systems of education are not, in fact, democratic, and that they limit personal

freedom, are punitive, and that academic success in our pass/fail system is too heavily weighted a predictor of future success, and that emphasizing the potential for failure in school and its corollary long-term negative outcomes will do little to motivate a student who is present-oriented.

Bembenutty and Karabenick (2004) encourage educators to actively teach children to become more aware of future goals, and to consciously examine the possible positive and negative outcomes of their goals, through modelling. Much of what they recommend, however, is in line with other researchers who stress the importance of emphasizing the future, with no acknowledgment of how stressing future utility value may not resonate with present-oriented kids.

The overall time-orientation of a school – or its school climate – has been shown to have an impact on students. Specifically, schools with a climate that has a positive orientation to the future have been shown to be beneficial to students who are more present-focused and who exhibit "problem behaviours" (Chen & Vazsonyi, 2013). Therefore, working to cultivate a school culture that values visions of the future may prove helpful to some students who are present-oriented and struggling with self-regulation and self-control.

Students who perceive future goals as imposed – and not intrinsic – or whose sense of the future is limited by environmental discrimination, are more likely to disengage with learning (Phalet, Andriessen, & Lens, 2004). Educators with little awareness of systemic inequities and time perspective may then experience greater difficulty reaching these students. These researchers also emphasize that societally disadvantaged students tend to benefit from classroom opportunities to work cooperatively and across cultural experiences, where

individual goals and competition are minimized (Phalet, Andriessen, & Lens, 2004), and this can be factored in to educators' planning.

Zimbardo and Boyd (2008) claim that in personal relationships, couples with mismatched time perspectives may struggle to communicate. While the authors don't speculate as to how this might translate into other relationships, it does raise the question of whether this communication barrier might exist between teachers and low-SES students. The authors' recommendation as to how to begin to build clearer communication between people with disparate time perspectives is to begin with the present, as it is familiar to each party (Zimbardo & Boyd, 2008). While they don't specify how to do this, the concept could be informative for teachers considering how to reach low-SES students. They further state that behavioural change programs (like the welfare example cited earlier) must be designed so as not to be dependent on participants already having a future orientation. Zimbardo and Boyd (2008) also suggest that to help someone develop a future time perspective, they must focus on supporting that person in practicing the delay of gratification, and help them minimize thrill-seeking behaviours. Their ultimate recommendation for helping people develop a future orientation is through a systematic process of teaching the specifics of "planning, goal-setting, and self-rewarding for the achievement of objectives and self-censure for the violation of social norms and moral codes. The program should be a process of socialization that has not been fully internalized by those who are primarily presents" (Zimbardo & Boyd, 2008, p. 291).

Beal (2011) emphasizes the role that metacognition (our ability to think about and reflect on our own thoughts, feelings, ideas, and beliefs) plays in the functioning of FTP. Educators

might use this insight to plan learning that grows students' metacognitive abilities as an aid to the simultaneous lengthening of their FTP.

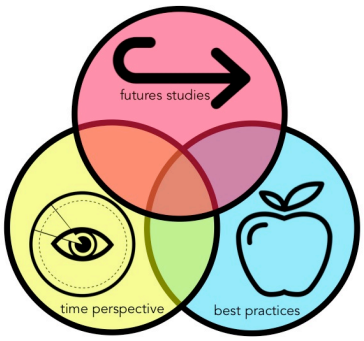
The lack of real-life opportunities in school minimizes students' ability to develop a healthy future orientation, according to Trommsdorff (1986). As such, an increased focus on planning authentic learning activities that are less symbolic and more concrete may also help in developing low-SES students orientation to the future. The author adds that providing low-SES students with opportunities that offer a sense of control and a feeling of responsibility may foster increased engagement (Trommsdorff, 1986).

In Williams' (2004) article on the role of personality and cognition in considering the future, the author suggests that we need to "find a way to show these children a potential future beyond the dangerous situation that they are familiar with, [so that they] might be more motivated to work hard and achieve" (p. 88). Again, the author does not outline the specifics of how one might do this, but it does offer a potential link to the hypothesis presented in *Foresight for Every Kid*.

Despite the apparent links between foresight and one's FTP and future orientation, there is little evidence of the field of cognitive psychology having explored how foresight develops in individuals (Hayward & Krishnan, 2002). As such, there is also no empirical evidence from the field of cognitive psychology defining how one might grow their foresight ability specifically. Despite this apparent lack of scientific investigation into the "construct of foresight," "future orientation is recognized as a critical competency of leadership" (Gary, 2009, p. 1). This is notable in how it may have implications for educators considering aspects of leadership implicit to their role, which may, in turn, relate to what was cited in the

previous section of this literature review with regard to future-oriented people having an increased likelihood of being middle-class, and occupying more decisive roles in Canadian and American society.

While none of the examples cited in this last section on time perspective adequately address how to support low-SES students in extending their FTP and developing their future orientation, they do provide ideas to help begin planning potential interventions. The next section of *Foresight for Every Kid* aims to explore the potential in futures studies to help bridge the gap for low-SES students living in future-oriented societies.



4.1 Synthesis + Analysis

At the heart of *Foresight for Every Kid* is the desire to better understand how educators might help improve low-SES students' academic achievement. But when we talk about academic achievement, what are we saying? We're saying that kids who are failing to achieve academically are unable to meet the particular demands of the systems of education we have established, while the academically successful are those who have managed to navigate them, and get ahead. Our tendency when considering the arbiters of academic success, however, is to focus mostly on the student, and not enough on the system–despite the interdependency of the two. In consciously using the word *system*, we refer not only to the obvious and underlying mechanisms that continuously drive our schools and school boards, but also to the larger social, cultural, economic, and political systems within which education is embedded and inextricably linked.

Despite this understanding of academic success being contextual to school, we mustn't underestimate its impact on a larger scale. While a test score or term mark doesn't define us fundamentally, it does have the potential to define our future: those of us without a high school diploma can probably expect to work in low-paying jobs with little security, and few opportunities for advancement. By contrast, those with a diploma, degree, or other additional certification obtained through schooling can likely anticipate more options, opportunities, and income down the road (Lineburg & Gearhart, 2013).

A student's formal academic career, therefore, essentially refers to their trajectory into the future: out of school, and into the 'real world.' For each student, the question remains as to when they will go through that transition: high school graduation? College? University? Or, perhaps, tenth grade. In Canada and the US, we have an inequitable system in which some young people thrive while others fail, in part because of sociocultural factors that either give a student an edge or introduce a burden before they've even walked through the school doors. What our systems of education are failing to do is properly equip all students, in spite of their individual out-of-school factors, so that they might achieve academically. We aren't adequately preparing teachers to do this, either. Consequently, we often continue to let the out-of-school factors that make school more difficult for some students to remain in place and can predict, as a result, the answer to the 'question of when' posed above: for low-SES students, the odds are greater that they will leave school sooner than their higher-SES peers (Lineburg & Gearheart, 2013). This can be equated with leaving their future behind.

For educators to fully appreciate the gravitas of the correlation between socioeconomic status and academic achievement, we must begin by looking at the situations within which we find ourselves. We know from Sam Sommers' work on the significance of context the extent to which the people we're with and where we are located influence our sense of self and, in turn, much of our lives. In reading his work, an educator might be tempted to project those insights solely onto their students, but I'm urging each of us to look carefully at how *who we are*, and *how we teach*, is influenced by the context of schooling, too. Schools come to life by virtue of the people in them, and are ultimately controlled by all of us. We are part of a system that replicates itself through our willing but perhaps naive participation, especially

those of us who attended schools in Canada or the US as children, or trained as teachers in either country, and now work in them.

So when considering the influence of context, we must think hard about what attitudes, stereotypes, values, and knowledge we are privileging, and why. According to educators like Jensen, and psychologists working in the field of time perspective theory, schools are the breeding ground of the middle-class, but largely succeed at this only when preaching to the choir, so to speak. Our ways of teaching and guiding learning are built upon the premise that the threat of the future will hold sway, and that long-term goals have salience for all learners. For many, this is simply not true. Instead of getting angry with kids who don't heed our warnings, we need to recognize that the language of time that holds currency in schools is a foreign one to many kids.

Educators can no longer ignore the psychological research into our relationship to concepts of time that has revealed correlates between socioeconomic status and one's likelihood to be more present- or future-oriented. This is the key finding upon which *Foresight for Every Kid* is built: the widely recorded link between people living in poverty being present-oriented, and middle-class people being more future-oriented. And while we don't have psychological evidence detailing exactly how our personal foresight grows, or have the empirical means to measure it, it is understood that corollary to a longer FTP and developed future orientation is an increased foresight aptitude (Hayward & Krishnan, 2002). Time perspective theorists urge us to consider ways to grow students' FTP, to help them gain academic and sociocultural advantage. While there is no hard evidence that futures studies or futurized teaching will indeed aid in growing students' FTP, it certainly seems to have potential to lend itself to the task.

Despite these insights, some educators may feel that the conditions under which some students live has impacted those children so severely that deep engagement in school borders on the impossible. Cognitive psychology research, however, has shown us that these beliefs are unfounded: our brains are designed to grow and change. Just as the conditions of poverty can have neurological impacts limiting cognitive development, they needn't be seen as permanent differences, and classroom conditions can have a countering effect. Neuroplasticity research reminds us that we can begin to regrow our brains and undo developmental deficits caused by deprivation and scarcity. The human brain's ability to change means that educators can form their own new neural pathways that enhance their learning and understanding about how to become better teachers to all students. The insights offered by neuroscience are twofold: we, too, can grow our own brains while helping our students grow theirs.

Once we understand the hidden factors and opportunities impacting low-SES students, we next need to look at our teaching practices and ask: what it is about school that alienates some kids, while drawing in others? Here, addressing only out-of-school factors is not enough–we must consider the in-school factors that engage some kids, and disengage others. What are we doing, as educators, to truly engage our students? To help stimulate a more fruitful reflection, consider that synonyms to *engage* include *fascinate, immerse, interest, involve, preoccupy, allure, absorb, captivate*, and *enamour*. Engagement, then, can be understood as a matter of both the mind, and the heart. How are we engaging the hearts and minds of students? No matter how rote or dull our own experiences of schooling may or may not have been, we owe it to our students to imagine what school feels like when it is truly engaging, and to do our best to bring those feelings to our kids.

Jensen's embracing of neuroscience research in the realm of education, specifically with regard to minimizing the impacts of poverty on learning, highlight key approaches to teaching low-SES kids that are especially engaging and important. One goal of *Foresight for Every Kid* is to factor these approaches into the development of a framework for futurized teaching, so as to add to the existing dialogue surrounding best practices for low-SES learners. As Jensen reminds us, educators are not meant to simply offer remediation of some perceived deficit or merely 'help' systemically disadvantaged students, we are tasked with enriching their experience of school, and of life.

Foresight for Every Kid proposes that meeting the needs of low-SES students in academic settings might be improved by futurizing the way we teach, so as to embed learning the language of the future into classrooms, with an eye to fluency for all students. While it must be acknowledged that the idea to insinuate futures studies into K-12 teaching is not new, it has yet to be formally proposed in the context of teaching low-SES students. The times of crisis in the past century out of which have grown the highly structured, methodical approaches we use to study the future today have yet to fully root themselves in popular K-12 teaching practice, however. Perhaps, until now, there has not been a widely resonant enough idea or justification as to why to introduce them. To be fair, those of us interested in the inclusion of futures studies and futurized teaching in K-12 practice are often already well acquainted with foresight processes, and are compelled by the merits we see therein. To the resounding majority, however, inquiry into the future remains an esoteric or unknown discipline.

If the argument that futures studies may hold a key to helping low-SES students develop a fluency in the language of the future is not compelling enough, note that there is more to it

than just that. The processes inherent to studying the future involve a whole-brain approach to thinking, activating both the most creative and most rational parts of our mind. Giving students concrete tools with which to examine the present and the past is done meticulously, to find out what is and what was, so that we might begin to conceive of what could be. Once clues have been gathered and analyzed, the creative process or 'wild mind' is engaged, inviting students to imagine their extraordinary futures. Upon capturing these futures by whatever creative means or outputs, students can examine them and begin to determine where they would like to head – as individuals, in community, or even on the scale of humanity. If any preferred futures are identified, students can put their creative hats back on, and begin a process of strategizing, innovating, and experimenting as to how they might get there. This formalized method of repeated converging in on and appraisal of information or ideas, followed by divergent thinking and mind-expanding creative processes, is a whole-brain exercise that might help build the kind of 'fluid intelligence' Jensen describes (2008, p. 53), and help counter the ways scarcity can actually "lower fluid intelligence" (Mullainathan & Shafir, 2013, p. 54). In schools where test scores and state standards have all but eliminated true engagement, incorporating an academically and creatively rigourous process might be key to re-energizing and re-engaging students.

Even the hardest working educators in our system can feel they are never quite doing enough. A lack of physical and human resources, the seemingly endless rolling-out of initiatives and new best practices, and pressure to stay on top of the latest technological developments can overwhelm even the most competent teacher, especially when considered alongside the quality of emotional care we are expected to provide every child, the academic development we are meant to coach, and the test scores against which many of us are pressured to compete. When we look at the statistics representing levels of academic

success in socioeconomically disadvantaged communities, educators working in this realm can feel especially defeated. Initiative fatigue is real: the noise created by competing strategies and approaches can be deafening, to the point where we just close ourselves off to change.

What's being proposed in *Foresight for Every Kid* is not a flash-in-the-pan, one-off tool. It's not a lesson plan, or an activity. It's definitely not a worksheet, nor is it a philosophy. So what is it? It's two things: the conscious adoption of the *futurized educator* profile, and the implementation of a *futurized teaching process*. The next two sections of this chapter provide educators with an introduction to both.

4.2 The Futurized Educator

While one of our challenges as educators is to look for ways to authentically bring into our teaching the breadth of our students' realities, it would appear from the research for *Foresight for Every Kid* that educators' middle-class lens often blurs our ability to see and appreciate the unique experiences and struggles of low-SES students, and obscures our detection of unique aptitudes in our students that might emerge from those experiences. Opening ourselves to seeing and appreciating the experience of all our students means sharpening our focus and broadening our perspective–particularly our understanding of time perspective. We are so tuned in to recognizing and rewarding the efforts and accomplishments of students whose time perspective is similar to ours that we fail to recognize some of the valuable traits and perspectives of our low-SES students. As long as we continue to ignore the future-oriented lens through which we teach, we can expect to miss out on opportunities to connect with and engage every student. To counter this, I propose we adopt and internalize the *futurized educator profile*.

In the literature review, I described the 'educator mindset' those teaching low-SES students are encouraged to adopt, so as to reach these students most effectively. Taken together, the many aspects of this mindset aligned around three main ideas:

Growth Mindset

A willingness to try new things, whether successful or not, and an openness to new learning and growth is key to the educator mindset. If we are to cultivate safe spaces for learning for our students, then we must model how to approach new ideas and tasks with humility, openness, and 'permission to fail.' We must demonstrate how new learning can emerge

from any experience, and help quiet the inner voices of our students that may make them afraid to try.

Mindfulness

An evolved educator mindset includes a dedication to self-awareness of who we are, and what we are doing. Making equity the cornerstone of one's practice in education requires a mindfulness of self, and an awareness of others, so as to foster empathy and understanding.

Metacognition

A reflective practitioner is an educator who thinks critically and reflectively about their practice. This metacognitive process includes a commitment to proactively working on growing their expertise, and a resistance to falling back on old methods that might go unquestioned.

Inherent to all elements in the evolved educator mindset is a commitment to equity. Many professional development programs help educators increase their awareness of the multitude of ways environmental discrimination and prejudice create barriers for our students so that they might recognize inequalities, and work to foster equity. Outstanding educators in Canada and the US today must have an empathic understanding of the role race, ethnicity, ability level, first language, socioeconomic status, first language, and other socioculturally imposed barriers play in how our students engage with schooling. Rarely, if ever, though, are we invited to consider the role that our time perspective plays in how we teach, and whom we teach. For that reason, the profile of a futurized teacher includes a fourth facet, which I call ***time perspective muteability***.

Don't be fooled: futurized teachers don't privilege the future, though they recognize that our systems of education do. Instead, futurized teachers 'time-travel,' moving seamlessly between time perspectives in their practice. They design assignments, activities, and units of study to bring to the fore an exploration of a range of orientations to time, acknowledging that the delaying of gratification required when striving for a long-term academic goal may not have salience for a student for whom the future is but a highly abstract, or even scary, concept. A futurized teacher a) internalizes an acknowledgment of the sociocultural privileges associated with holding a future orientation, b) reveals the future-oriented bias inherent to schooling, and c) works to tie this widely unacknowledged privileging of the future into a comprehensive education program that makes a future time perspective and future orientation visible and attainable for all students. Doing so does not mean diminishing or discounting the value of a past or present orientation, but does mean offering students for whom these are their primary perspectives access the privilege of those for whom the future is already a prime motivator for success. A futurized teacher is a teacher of the future, literally and figuratively.

4.3 The Futurized Teaching Process

The extent of an educator's awareness of time perspective bias and privilege will inform the trajectory of their students' learning, for better or for worse. A futurized educator, however, is poised to futurize their practice to avoid the pitfalls of time perspective ignorance. Such a practice involves folding students ideas, hopes, and plans for the future into the ways we already teach, and the work our students do, by first adopting the profile of a futurized teacher as described in the preceding section. Futurizing teaching, then, requires only the expansion of a teacher's existing frameworks of instruction to include tasks that span the full breadth of time perspectives. The result is a cyclical process that activates and develops students' inquisitive, analytical, creative, evaluative, and aspirational abilities.

As previously mentioned, however, most K-12 classrooms are not futurized, and as a result, students tend to work along a truncated timeline focused only on what happened in the past, and what's happening today. This means that despite the academic leverage a student with a future orientation possesses, the work we often ask students to do is solely focused on events and ideas of the past and the present. In not actively studying the future in our school-based projects, we're limiting our students' ability to see themselves in it, and to cultivate a sense of agency in their own lives. This holds true for all students, not just those who have already developed a future time perspective and future orientation.

Here is an anecdote that describes this phenomenon. Last year, I met up with a friend for dinner. She, too, is a middle-school teacher, and we often discuss teaching as it's something about which we are both passionate. On this particular occasion, she wanted to tell me about a long-term project her students had recently completed. Their work had been focused on

waste management, and they had done substantial research leading up to their final product. The students were in the seventh grade. These were not low-SES students: they were largely middle-class, relatively privileged kids living in downtown Toronto, most with a solid academic record.

My friend went on to say that despite the students' investment in their projects–the thoroughness with which they researched and analyzed the topic, and the meticulousness of the work they produced–there was a perceptible malaise once the projects were complete. The students had done an excellent job of fulfilling all the tasks outlined in the project description, yet something was 'off'. My friend couldn't quite put her finger on it, but it eventually came to her: the project was depressing. The biggest take-away for the students wasn't an appreciation of their newfound knowledge of their research topic, it was an awareness of emergent feelings of helplessness regarding our world's seemingly interminable waste generation, and the harsh realities of environmental degradation. The students had come to realize, very clearly through their own work, that they were to inherit a dismal garbage situation. The students were beginning to lose hope.

For many low-SES students, we know their sense of hope is already limited. These kinds of assignments can have an even more deleterious impact, assuming we are successful at using them to successfully engage kids. What's required instead is an expansion of these tasks, to incorporate ideas of the future, hopes for the future, the development of strategies of how to get there, and real action. In the example described above, the students could have extended their investigation to include the generation of scenarios about possible futures of waste management, and the subsequent analysis and determination of which future or futures are most preferable to them, as a way to counter dystopian end points.

From there, students might have begun to strategize ways get to those futures, and subsequently designed, prototyped, and implemented actions to that end. What was originally a process focused on information gathering, analysis, and regurgitation could have been easily futurized to engage many other modalities, while building a sense of agency in the students. These additional forms of engagement might help mitigate the feelings of hopelessness that often accompany negative ideas about the future. An example of this process, employing the futurized teaching process shared here, can be found in Appendix A.

The first step in futurizing teaching practice is to consider the varied roles students embody through engagement with different learning tasks. As quoted in the literature review, those who study the past are historians, those who study the present are journalists, and those who study the future, futurists. We regularly invite students to embody the roles of historian and journalist, but rarely the futurist. A futurized teaching practice must invite students to vacillate between all three vantage points. In doing so, we guide them through processes that help them expand their relationships to and understanding of the continuum of time. For low-SES students and others for whom the future might not yet be a fully developed and internalized concept, this process is crucial in helping them get better acquainted with it.

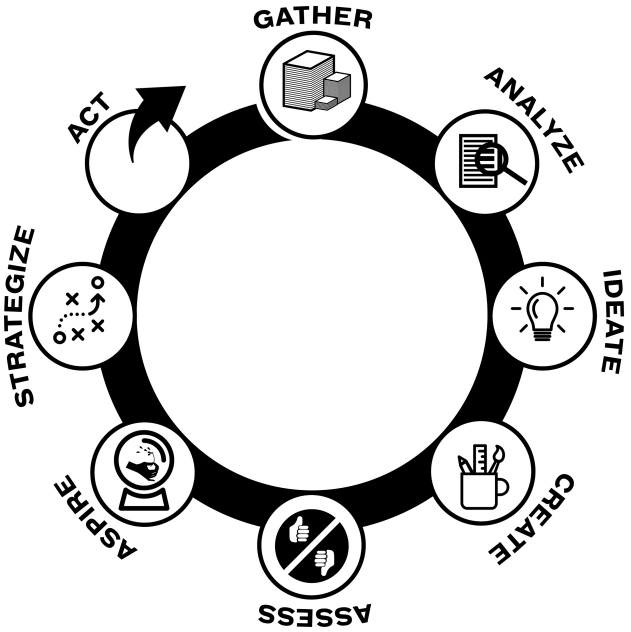


Fig. 1: The Futurized Teaching Process Framework

The futurized classroom depends on a circular process framework for guidance. The framework is most easily applied to the arts, sciences, and humanities subjects, but could be modified or expanded to work in other contexts as well. It is an interdisciplinary approach to teaching and learning that can be exploited to bridge many different modalities and outputs. It consists of 8 steps or phases, shown in the process framework diagram above (see Figure 2). Note that taken together, these phases are merely guidelines for planning, and none contain specific activities or lessons. For the future-oriented parts of the process that are likely newer to most teachers, I have included some footnoted suggestions of where to find inspiration, tools, and activities to fulfill these phases. You may notice similarities between futurized teaching and other frameworks, like project-based or inquiry-based learning, or popular research processes. Futurized teaching borrows the best elements from these approaches, but includes the engagement of foresight practices which are notably absent from the frameworks that predate it.

Gather

The first phase of a futurized activity, project, or unit of study is to *Gather*. Gathering can include scanning, though is more broadly defined as the collecting of information and ideas that are revelant to the topic(s) or subject(s) being investigated, through a survey of historical and present-day data. This is a pursuit already familiar to most teachers and students, and is the typical first step of any research task. A familiarity with scanning to identify signals, trends, and drivers, however, will enrich this phase.

Analyze

Once information has been amassed, the students are directed to *Analyze* it: to scrutinize it for clues, ideas, trends, or other key points of interest as defined by the overall endeavour. Depending on the topic, subject, or area of inquiry, the teacher can determine the means by which students might sort and interpret the information they have gathered. Part of the process, though, is highlighting key or critical ideas or information, to inform the next step of the process.

Ideate

In a non-futurized classroom, the ideation phase may take the form of developing a plan for how to create or design the final product that will showcase what a student has learned through their investigation thus far. For many, this phase means the student is already nearing the end of a project. In a futurized classroom, however, to *Ideate* means beginning an exploration of the future, and is not a culminating activity at all. While the information gathered and sorted in the first two phases was drawn from the past and

present, the ideation phase invites students to brainstorm and populate ideas for the future, using key insights from the analyze phase to inform it. The ideate phase can be done through any means that permits divergent thinking, such as brainstorming. The goal here is to capture a broad spectrum of ideas for possible futures.

Create

Once ideas have been generated, students can *Create* their possible futures. In futures studies, this could mean organizing scenario highlights in list and table form, writing narrative scenarios, building artifacts from the future, or inviting people to participate in experiences of the future. They're not limited to these approaches, however, and students are encouraged to conceive of other means of capturing, conveying, and evoking ideas of the future. The time frame for the futures generated will vary depending on the domain being explored. In an exploration of technological futures, for instance, a shorter time frame of five to eight years might be appropriate, whereas an imagining of new cultural practices or norms may require a significantly longer view, because of how slowly large-scale social changes occur.

Assess

Next, students are asked to reflect on these visions of the future and *Assess* them. What appeals to me? What scares me, and why? How would this impact people in other parts of the world? What feels possible? This phase asks students to critically consider, from many angles, what we each and collectively stand to gain and lose from each scenario. As this phase is essentially a democratic one, it can be especially useful for introducing and exploring democratic processes.

Aspire

From the assessment process, there can now emerge a preferable future, one that students *Aspire* to arrive at. Unanimity around an aspirational future may not occur, and this is fine: the goal is engagement. Students should, however, be able to justify just what makes an aspirational future preferable. Whether a whole group agrees, or smaller factions form around particular futures, the intention here is to identify what students hope will come to pass, and why.

Strategize

By this phase, students have knowledge of what came before, a sense of what's happening now, and have identified where they would like to head in the future. Now focusing on one preferred future–in smaller groups or as a whole class–students are invited to begin to *Strategize* how to get there. What can people start doing today that will lead us in the right direction? The goal of the strategize phase is to develop a plan with actionable elements.

Act

With strategic plans for the future in place, it's time for students to *Act*. This time, ideation and creation may well be the 'culminating task,' but it's imperative that these actions be authentically connected to the real world. Whether actions are designed to make change to the classroom, school, community, or beyond, they should allow the students to use their skills, interests, and aptitudes in contexts that allow for real-life experimentation, the exchange of ideas, engagement in thoughtful provocation, the implementation of social change, the creation of a new product or service, or passionate advocacy. Opportunities for autonomy and self-directed learning are beneficial to this stage.

It is the act phase that permits students to externalize their efforts and understanding, channel their emotions, and communicate to real audiences what matters most to them.

The futurized teaching framework is not designed to be a one-off experiment, though you may need to treat it as such the first time you give it a try. Really, though, this process is intended to form the cornerstone of inquiry and production in the classroom, so as to repeatedly activate and engage past, present, and future oriented thinking. John F. Kennedy said, “Change is the law of life. And those who look only to the past or present are certain to miss the future.” In a futurized classroom, students can look to the future through an examination of the past and the present, in turn maximizing their resilience in the face of change, and perhaps instilling hope. When used optimally, the futurized teaching process framework allows students to learn from history and the present, so as to actively create a future they aspire to reach. For low-SES students especially, this might be a transformative experience.

5.1 Conclusion

Foresight for Every Kid set out to answer the question, "How might futures education for K-12 students in socioeconomically disadvantaged communities provide a leverage point for breaking cycles of systemic poverty, if at all?" The research process was built upon a thorough literature review, looking specifically for promising overlaps across three distinct disciplines: futures studies; K-12 education, with a specific look at best practices designed for maximum impact with low-SES students; and time perspective theory. Information highlighting the range of potential factors that can negatively affect socioeconomically disadvantaged students' academic achievement was brought into the review to help clarify the project's aims. Branches of popular neuroscience and psychology were also consulted to deepen the appreciation of how learning occurs and can be limited by socioeconomic factors. To frame the project, a commitment to equity was stated at the outset and informed the process at every stage. It was hypothesized that futures studies might broaden the time perspective and future orientation of those who practice it, thus holding promise for use with low-SES students who struggle to think and plan long term.

To answer the research question and potentially prove the project's hypothesis, first an overview of the futures studies discipline was provided, offering readers unfamiliar with the field a sense of how it arose, what it encompasses, and some of the ways it has been used in K-12 schooling to date. It was noted that futures studies has yet to become a mainstay in public education, despite past and current attempts to bring it to the fore. There was no data showing a specific link between low-SES students, futures studies, and improved academic outcomes, as no studies appear to have explored these three issues simultaneously. However, the relatively limited use of futures studies and futurized teaching in schools has

established promising relationships to student engagement, and students' increased feelings of hope with regard to the future.

The literature consulted on the topic of socioeconomic status and schooling confirmed that low-SES students in Canada and the US are, on average, underperforming academically as compared to their higher-SES peers. Writings from the field of time perspective theory then revealed that a contextual trait linked to socioeconomic status is time perspective, and that low-SES students are more likely to be present-oriented, chiefly a consequence of the 'tunneling' that occurs due to scarcity. Middle-class, higher-SES students, on the other hand, are more inclined to think on the future as they are less burdened by unmet needs in the present. It was further noted that educators themselves are middle-class and therefore future-oriented, too, resulting in the perpetuation of a school system that rewards students who are motivated by long-term goals and prospects. Academically successful students, therefore, are those who can imagine fairly far into the future, set goals, and defer gratification in order to work toward them. In this system, our present-oriented students' perspectives are less likely to be acknowledged, honoured, and validated. It was recommended that these students, many of whom are of low socioeconomic status, be provided support and enrichment to help them expand their visions of the future, and to give them access to a broader range of possible futures for their own lives, instead of the probable one they are likely to arrive at if we let statistics be our guide. In order to do this, *Foresight for Every Kid* suggests that educators must first shift their mindsets, tuning in to the time perspective bias in their practices, and adjusting accordingly.

A cursory survey of popular psychology, specifically with regard to mindset and context, exposed the myth of fixed intelligence, revealing instead that our brains can and do change

through new learning. These insights indicated that despite some of the cognitive differences that may present themselves in low-SES students as a result of their circumstances (including their often limited time perspective), that they can be reversed through new experiences and learning. As time perspective is developed primarily in family contexts, schools are poised to proactively create a positive context to offset the out-of-school factors that make it harder for low-SES students to compete academically in the arena of school. The potential in neuroplasticity means educators, too, can grow and change their brains through the learning and adoption of new teaching mindsets and approaches.

The subsequent overall synthesis and analysis of these key literature review findings corroborated the project's hypothesis: futures studies does have the potential to foster positive learning and growth for low-SES students in schools, given the work that has been done in schools thus far in the discipline. While the investigation did not uncover indisputable proof that futures studies will be effective in mediating some of the OSF's burdening many low-SES students, it did show that the introduction of foresight techniques and futurized teaching are likely to engage students and enrich their learning. It was noted that some foresight processes elicited feelings of sadness and hopelessness in some research participants, and those choosing to use these methods should be cognizant of these risks and incorporate ample emotional support for students who may feel unsettled when studying the future. These new forms of engagement and enrichment have the potential to improve low-SES students' academic achievement, thus helping shift their long-term prospects toward further education, and increase their eventual likelihood of moving out of a life of poverty.

When prompted to consider yet another new way we might reach low-SES students, an educator may be inclined to point out the range of initiatives already in place to help disadvantaged students–socioeconomically or otherwise–get ahead in our biased school systems. On-site physicians, and access to healthy meals, for instance, are two ways some schools are mediating the out-of-school factors that can force kids to tunnel, distracted by hunger or a lack of well being. While looking after our students' physical needs should not be underrated, a primary focus on mediating only the tangibly negative aspects of what it means to be socioeconomically disadvantaged comes at the expense of addressing some of the less visible factors that perpetuate systemic poverty. Family and community contexts, and the way they reinforce ideas of self, need to be better understood and honoured in education. In the same way we talk about women's 'glass ceiling' in the corporate world, so too must we acknowledge that within our future-oriented schooling system, we have built invisible barriers that disadvantaged students will not be able to get past without our first admitting that they are there, and our subsequent working to eliminate them (Brown & Jones, 2004). *Foresight for Every Kid* scrutinized the invisible barrier of time orientation, and provides suggestions as to how to tackle it head-on: through the internalization of the profile of a futurized educator, and the subsequent futurization of teaching practice, using the futurized teaching process. Both the profile and the framework were designed for this project as responses to the research question and were informed by insights gained from the literature review. Through conscious, thoughtful, strategic futurized teaching, educators may begin to see an increase in low-SES student engagement, the further development of their time perspectives and, ultimately, academic success; when taken together, these three benefits begin to form the image of a future without poverty that is not only preferable, but possible.

5.2 Next Steps

While working on this project, I continually felt as if I were chipping away at only the tip of an iceberg. Armed with a decent understanding of systems thinking, it was apparent throughout the investigation that many of the issues and ideas explored herein are inextricably linked to other social, economic, political, environmental, and cultural factors. As such, the potential to expand this project into other domains of investigation remains. A few areas of particular interest are noted here.

• The relationships between racism and classism were repeatedly apparent in the literature. The hard statistics grouping racialized people with poverty are impossible to ignore, as are the statistics linking affluence with whiteness. This blatant evidence of the continuing stronghold of white supremacy, and the ongoing oppression of Black people and First Nations people in particular, are indications of how environmental racism is alive and well in our schools. While existing research only corroborates links between time perspective and socioeconomic status, showing other demographic factors to be inconsistently influential on time perspective, there is evidence that for some Black students who have an FTP, their future orientation can simultaneously be limited. This dichotomy is observed in students who can organize their thoughts about the future, and cite an understanding of the benefits of a future orientation, but don't heed it in practice. It is believed that perhaps keen perceptions of systemic inequities are alienating Black students from valuing school, as it's felt to be subtly and overtly perpetuating a broader sociocultural system that is fundamentally racist. Put differently, there is evidence that Black students with a limited future orientation, but who perceive their schools to be "fair and culturally sensitive" exhibited more "positive attitudes toward academic work" (Brown & Jones, 2004, p. 268). I wasn't able to delve more

deeply into the relationships between future orientation and systemic racism, though want to acknowledge them here and emphasize their potential for further investigation

• The conceptualization of preferred futures allows us to imagine a more equitable, and ultimately equal, world. Research into the potential for futures studies to be used specifically to improve educator and student understanding of equity, and for growing empathy, may therefore merit additional investigation.

• The field of inclusive design could be consulted for ways to expand the futurized teaching framework to best engage students of all abilities. Inclusive design focuses on designing for 'extreme users,' those for whom conventional systems, tools, and devices might not be user-friendly. This approach may prove especially useful in the realm of public education where we tend to identify and label students as disabled when they do not successfully integrate into the conventions of schooling. Jutta Treviranus, a leader in the field of inclusive design, describes disability as "a mismatch between the needs of the individual and the service, product, or environment offered. It's not a personal trait; it's a relative condition brought on by bad design" (Kochany, 2013, para. 5). This shift away from the notion of disability-as-innate to a condition brought on by poor design has the potential to radically redefine how we understand what is meant by 'academic ability' in education. The limited scope of this project, however, and my relatively limited knowledge of inclusive design, meant I was unable to explore the potential for the futurized teaching framework to be improved to better encompass the full range of students' learning styles and abilities.

• The means for measuring shifts in time perspective exist, and could be used to quantitatively and qualitatively determine the effectiveness of using futures studies and

futurized teaching to grow one's future time perspective and future orientation. To that end, it would be interesting to see psychology researchers in the field of time perspective theory collaborate with futures studies educators to more broadly determine what kinds of formal links may exist between the two disciplines.

• While analysis, synthesis, imagination, and other learning modes were acknowledged as forming part of the futurized teaching process framework shared in this project, the scope of *Foresight for Every Kid* simply wasn't big enough to explore the potential for students to grow their social/emotional skills through futures studies. As an educator committed to prioritizing students' overall well being, I would be especially interested to investigate possible links between an engagement with futurized learning and improved social/emotional development in kids.

• I alluded to a handful of contemporary teaching strategies when discussing the futurized teaching framework, though this project did allow for a thorough analysis and review of how existing approaches might dovetail or complement the framework proposed here. There is potential to look across pedagogical approaches and highlight how the futurized teaching framework aligns with other teaching methods and strategies, or how they differ.

• This project is rooted in an interest in educational transformation, yet it did not detail ways that its findings might be shared or expanded to incite broader systemic change in education. The futurized teaching framework and educator profile are aimed specifically at educators working directly with low-SES students, but have the potential to be reworked for broader educational applications.

• Lastly, I was reminded at the beginning of this project that the goal of a Major Research Project is, more than anything, to start a new conversation. I feel I have done that here, and intend to continue it. First, I will put these ideas into practice in my classroom, and will continue to assess, rework, and grow the teaching framework as new insights come to light. The document you are reading will be reworked into a more digestible format, bound and printed, and shared widely with any interested parties. I have secured a domain name, *foresightforeveykid.com*, and will publish the information there, along with a chronicling of related work that follows. I have already made connections with Teach the Future, an organization of futurists working to bring futures studies and futurized teaching to secondary and post-secondary institutions worldwide, through an online repository of educational materials.

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Appendix A

The Futurized Teaching Process: A Sample Unit

Inspired by the anecdote shared in the project report, here is a simple example of how the futurized teaching process might be implemented for a social studies topic in a 7th grade classroom. I have omitted specific curriculum expectations and assessment/evaluation methods, focusing instead on some of the practical aspects of putting this process into practice.

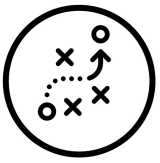
Area of Investigation: *Waste Management*

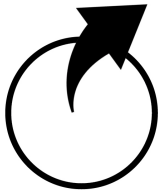
Background: Students seem curious to find out more about how waste is managed, after discovering that a percentage of their locally disposed garbage is actually shipped to other locations and dumped there. Informal discussions and debates have ensued, leading the teacher to conclude that this would be a stimulating and engaging area for investigation for the students. The 8 steps of the futurized teaching process are shown in the table below, to describe in detail how the teacher might implement the unit of study.

 **GATHER**	• The first step in *Gather* is to begin to formulate a main research question with the students. What, in essence, do they want to find out about waste management? To maximize the impact of the unit, work with the students to develop three research questions, centred on the past, present, and future of waste management. *What big question do we have about the history of waste management, that could help guide our investigation? What about our waste management practices and habits today? What are we wondering about the future of waste management?* These questions should be broad in scope. • The next phase of *Gather* is to begin to collect information on the topic being investigated, that responds to the first two questions (about past and present). This is done through the students' adoption of the roles of both 'historian' and 'journalist.' Students in the role of historian will seek out historical data (older or more recent) that explains aspects of waste management. Prompts could include: *How did we begin 'dumping' garbage in large, collective spaces? What prompted the move toward recycling? How did our city implement its food waste recycling program, and what exactly does it entail? Are diapers really recyclable? Why do store-bought electronic items typically come with so much packaging?* These prompts can be generated by the students as sub-questions of the larger research questions, using the STEEP+V prompts as guidelines to ensure breadth of research. Students working as journalists will need to gather information that responds to the present-day research question about waste management. These students may begin by recording their own family's waste disposal habits, and finding out about those of other relatives and friends. They will also need to look at what is being said and written in the media, in current literature, in government reports, and in policy to capture a clear picture of the domain of waste

	management today. • Using an online space to collectively store information, such as a wiki, blog, Google folder, or similar, may prove useful as a communal way to manage the data found. While individual students will make a variety of contributions to data collection, all students will need access to the full range of data for the subsequent steps of the unit. TIP: Students can be partnered or teamed into groups responsible for uncovering information and insights related to a specific element of the STEEP+V framework.
 **ANALYZE**	• Once the students and teacher have determined that a sufficient amount of information has been gathered, it's time to *Analyze*. This phase of the process asks students to look for hints and clues that might indicate a signal or a trend. This means looking for small, sometimes seemingly insignificant information that might have the potential to grow into something bigger. For instance, prior to the wider adoption of recycling programs, were there emergent signals that might have hinted to its inevitable growth and eventual implementation as an urban program? The challenge is to look for these kinds of hints today, and to begin to speculate as to where they might lead. TIP: Tools such as timelines or the 'Futures Wheel' (both readily available through simple online searches) might be employed here, as a way to cue students into thinking about nascent, emergent, and fully-fledged aspects of waste management. Plotting data gathered along a timeline helps visualize ideas that occurred at relative points in time, whilst the Futures Wheel exercise allows students to begin to explore the systemic ways in which waste management is connected to other societal issues and factors, and how these factors might grow and change over time.
 **IDEATE**	• Now that the information on the past and present of waste management has been gathered and analyzed, students can begin the process of making projections into the future by donning the hat of 'futurist.' While looking at the past and present are familiar roles for students, working from the perspective of a futurist will be new. At this stage, it might be helpful to introduce a framework such as the 2x2 matrix, or the four generic images of the future, to help students begin to conceive of possible futures. It's also necessary that they choose a time frame into which they would like to project. Do they want to imagine the future of waste management in three to five years? Or are they more curious about exploring ideas further into the future? The students can determine this as a group, with guidance from the teacher. To ensure maximum student engagement, it would be useful to determine which time frame feels most interesting and provocative to students. Are they contemplating their own future when considering how waste will be

	managed in the future? Or that of their children or grandchildren? Or another time frame entirely? • The purpose of the *Ideate* step is to take the data gathered and the signals and trends identified, and begin to project them into the future. There is no right answer here; the process is one of imagination and conjecture, informed by the information retrieved in the first phase. An examination of how long it has taken certain historical changes to come to fruition (in the realms of technology, social policy, and fashion, for instance) may help students determine the degree of change they might witness in their projected future. The challenge in this phase is typically to push ourselves to think beyond what we know, as humans have a tendency to imagine the future as merely an extension of what is familiar today. Collaborative teaching methods that invite students to brainstorm and generate multiple ideas will be helpful here. • The ideas for the future generated in the *Ideate* phase are rough in form: they may be a series of point-form notes, stickies collected into groups, lists, sentences that begin to describe distinct futures, sketches, or other ways of capturing ideas. TIP: Futurists will often generate four distinct versions of possible futures. This number is big enough to create a series of distinct contrasts, but not so large as to be unwieldy or overwhelming. In some cases, it works best to divide students into four groups and have them work in teams to develop a specific possible future.
 **CREATE**	• Following the creative process of ideating and projecting into possible futures, the students are now tasked with creating them. While traditionally futurists have worked in narrative formats, or bulleted lists in tables, there are emerging practices that bring in elements of art and design to the scenario-making process. In some cases, the creation process may not involve a scenario at all, but instead a physical artifact 'from the future,' meant to evoke aspects of it for contemplation. Students may have specific ideas of how they'd like to represent their four futures: as stories, digitally-manipulated photo essays, drawings or collages, websites, games, immersive experiences, walking tours, simulated radio or television broadcasts, or something else entirely – the options are endless. TIP: Whatever methods are chosen, the ultimate goal of the *Create* phase is to bring the students imagined futures of waste management to life. Part of the design challenge here is to produce something that can engage people, and give them enough of a sense or idea of the possible future being presented that they can contemplate it.

 **ASSESS**	• Once the students' possible futures have been created, they are shared and then assessed. In this case, 'assessing' is not about determining the quality of the students' work, but involves the students analyzing the content of their possible futures so as to begin to determine which, if any, are most desirable. This is an introspective process that asks students, individually at first, to consider what they hope will come to pass, and why. Once students have had a chance to consider the distinct future possibilities, they must come together in pairs, groups, or as a class (or all of these) to begin to discuss and debate the pros and cons of each future. Looking ahead, what do they hope is the best future for waste management, and why? TIP: This is a great opportunity to hold a debate, United Nations-style 'conference', or other group-oriented approach to deliberating over a topic. For the initial introspection, asking students to journal or privately record their feelings and thoughts is a good first step in helping them articulate their point of view.
 **ASPIRE**	• Ultimately, the students need to decide: to what do they aspire? Which of the four possible futures of waste management is most appealing to them? In some cases, the class will not come together around a single future. In this case, groups can be formed that share a common preferred future, or the class can work together to problem-solve and create a hybridized future that meets most students aspirations for what will become of waste management. TIP: It's okay if students don't all agree. From an ease-of-teaching standpoint, having the class rally around one preferred future would be simplest to manage. However, rarely if ever do people in society come together in support of a single goal. Rather than force the choice, the teacher can work with the students to hang more than one preferred future in the balance. A class meeting or discussion may help to determine a collective plan as to how to manage this.
 **STRATEGIZE**	• Whether there are one, two, or more preferred futures identified as preferable by the students, the next phase is to *Strategize*. This requires looking at the preferred future(s), and beginning to determine what can be done today to arrive there. One method for achieving this goal is called "backcasting." This is the opposite of forecasting, and asks students to work from the end goal (their preferred future) and to backward-plan steps from future to present that will help them arrive there. This process will resonate with teachers who use the 'plan with the end in mind' approach to lesson and unit planning. Backcasting tools are also readily available online. • The goal of the *Strategize* phase is to identify specific actions or approaches that might be taken now, and in the near and more distant future, that will help us move toward the preferred future(s). In the case of waste management, it will depend on what kinds of futures the

	students envision. Do their futures include the production of different kinds of packaging materials? Then perhaps their first step today is to begin to research and uncover new options for packaging. Does their future require a major shift in consumer behaviour? Then perhaps their actions today will require the development of a behaviour modification campaign. TIP: The challenge for the students in this phase is to determine what they can achieve, as it is very open as to what direction they might take. This, and the final phase of the process (*Act*), offer the students authentic opportunities to bring their learning to the real world. Limiting student choice to only classroom-bound activities or options may diminish engagement. Instead, the students should be encouraged and supported to explore their curiosity and capabilities. This can be the hardest part for educators, as many of us are accustomed to drawing distinct boundaries around the kinds of work our students do, and where it is done. Giving students the opportunity to extend their work beyond the walls of the classroom can be empowering to them. Teachers can work to help students recognize opportunities and strengths, and to forge connections. For instance, if students want to consult with a scientist or other expert in a field related to waste management, the teacher can help facilitate that.
 **ACT**	• The *Act* phase is where students get to extend their learning. More often than not, this is the missing step in classrooms that leaves students feeling like work is hollow and not meaningful. When students are able to act upon their ideas in authentic ways, they will not ask questions such as “Why are we doing this?” or, “How am I ever going to use this in real life?” TIP: One aspect of the *Act* phase might be to encourage students to use their visions of possible futures for waste management as engagement tools for new audiences. If they intend to bring their idea, message, product, or other concept to broader audiences, could their actualized possible futures be used as tools to help communicate their ideas? This option may also present genuine opportunities for them to edit, refine, and rework existing aspects of what they have already produced in the unit.

Within these eight phases of teaching and learning, there are innumerable tools and methods teachers already use that can be adapted for use here to help students explore information, ideas, and strategies. The design of this framework is such that it can be used and re-used in myriad ways, depending on the area(s) of investigation, student aptitudes, school culture, or other factors that impact teaching. Most of the process is driven by the students, with the teacher(s) acting as facilitators and guides. Educators who already work in co-creative ways with their students will most easily adapt to this framework. That said, more traditional teachers can still incorporate futurized teaching into their practice, simply by adding in the steps of extending the students’ investigation into the future (not merely relying

on the ‘historian’ and ‘journalist’ roles typically adopted by students in classrooms), and the last three steps of *Aspire, Strategize*, and *Act*.

FINAL TIP: While most teachers are not working from a futurized mindset or with futurized teaching processes, there are ways to find inspiration and motivation based on student projects already underway. Crowdfunding sites such as Indiegogo and Startsomegood host and have hosted many campaigns run by students. Browsing their archives of student initiatives can help illuminate the kinds of work students may choose to pursue when acting upon strategies to arrive at preferred futures. In suggesting this, I’m not implying that student actions toward preferred futures need to involve crowdfunding. Instead, I’m simply highlighting one source that may help demonstrate a range of actions students are capable of initiating when encouraged to take their goals and aspirations outside their classroom walls. In many cases, crowdfunded projects generated by students do represent a kind of ‘preferred future’ or outcome, even if they are not built upon the rigorous research and development that forms the backbone of the futurized teaching process.