



A Return to Learning

Re-kindling Education's Love of
Learning for Schools of the Future

Miranda Honasan

A Return to Learning: Re-kindling Education’s
Love of Learning for Schools of the Future

By Miranda Honasan

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Abstract

Education continues to be a well-researched topic and the importance to re-imagine schools of the future could not be a more pressing concern than it is today. As critical tensions steeply arise, such as climate change, systemic inequities, or digital ethics, we must wonder whether the present education system is adequately preparing children for the critical uncertainties of today and of tomorrow. And, as the Ontario education system is facing unprecedented circumstances with the unearthing of thousands of Indigenous children beneath Canadian residential schools, and the school disruptions caused by the COVID-19 global pandemic, the fragility and declining relevance of the institution is being exposed.

Instead of a prescriptive approach on specific strategies and policies that could take place, this study focuses on creatively re-imagining schools of the future through systems analysis frameworks to identify levers of change, paired with a foresight approach utilizing the Three Horizons framework. To inform, validate, and challenge these frameworks, an ongoing literature review took place over the duration of the study, and a small sample size of education system actors was interviewed and invited to participate in a foresight workshop. Together, these efforts aim to explore a response to the question: How might we shift our paradigm of education to chart a pathway forward to re-imagined schools of the future?

A lever of change worth exploring, which is the focal point of this study, is education orthodoxy across system actors. I explore how a shift in fundamental education ideology could have a drastic impact on the education system, possibly producing a preferred future. While I propose that an ideological shift can have far reaching ramifications, I acknowledge that it must be matched with other systemic interventions, but that changing the way we think about education is certainly a critical starting point.

Acknowledgements

It will always feel like there’s more to research, more to investigate, and more to be done – but for what has been accomplished, I am so grateful for the group of people who walked this leg of the journey with me. Through your passion for education, you fight for human regeneration.

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And to my sounding board, my positive realist, my trustworthy advocate: my husband. Joel, thank you for everything, seen and unseen. You always challenge me to be better and I am forever grateful for your commitment to grow with me. This wouldn’t have been possible without you.

Finally – Naomi, this one’s for you. May I hold myself accountable for your education. May I be amongst your greatest advocates. May I lead by example and alongside you. And may I help co-create your preferred future.

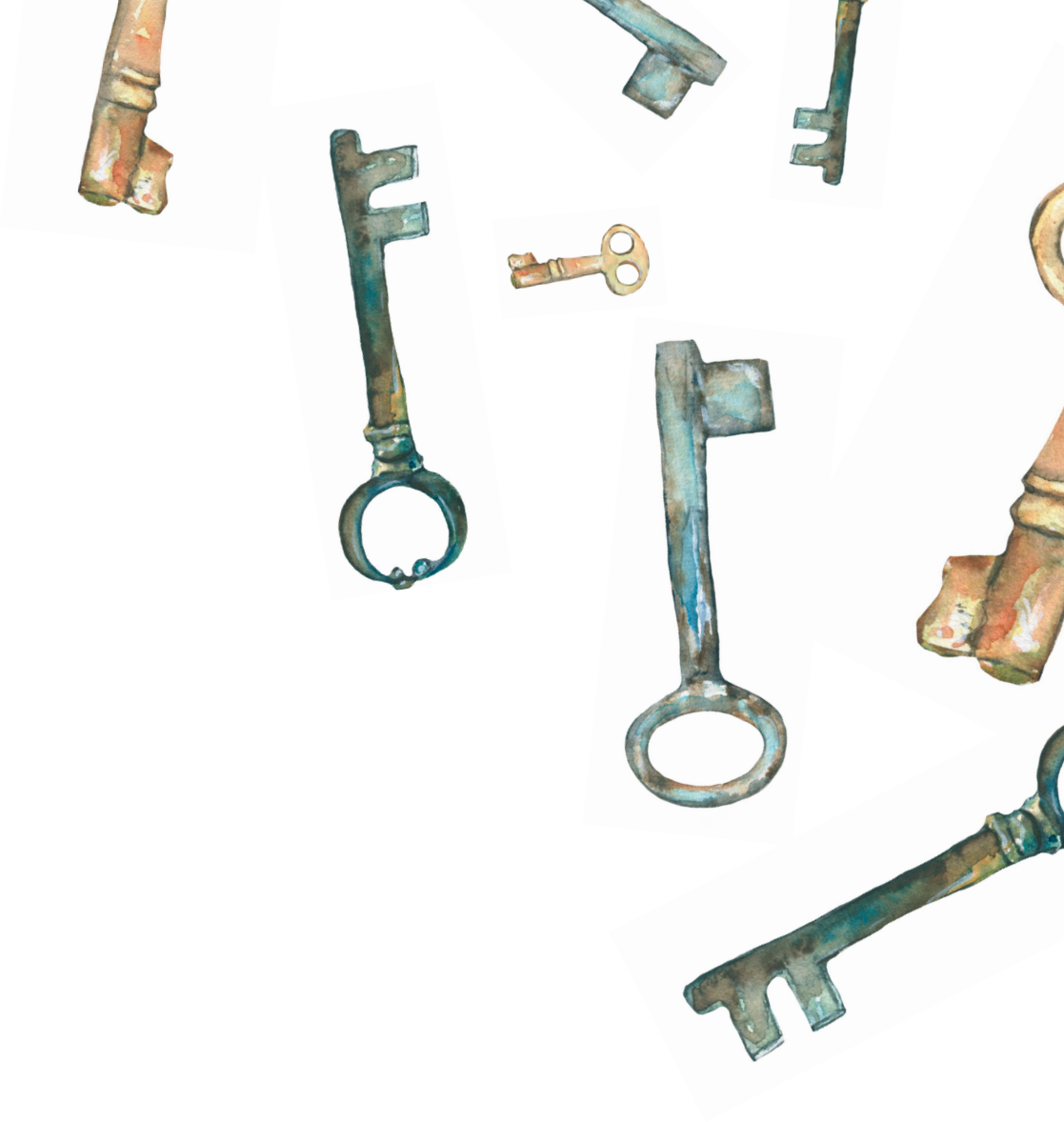


Table of contents

01	Introduction		14	Identifying Levers of Change		27	Imagining a Preferred Future of Education		47	Conclusion
	Project Scope and Purpose	05		Iterative Inquiry: The Context of Education in Ontario	16		Horizon Value Tensions	30		
06	Methodology			Actors and Influence: Who does/think what, and in relation to who?	19	32	Defining Pathways to Re-Imagined Schools of the Future		51	References
	Research Inputs	08		Causal Layered Analysis (CLA): Exposing Education Ideologies	23		Re-Visiting the CLA: Creating a New Ideology	35		
	Systems Thinking and Foresight Frameworks	09					Artifacts of the Future	39		
	Study Limitations	12								

List of Tables, Figures, and Illustrations

Figure 1	Research Methodology	07
Figure 2	Iterative Inquiry	09
Figure 3	Causal Layered Analysis	10
Figure 4	Three Horizons	11
Figure 5	Education System Iterative Inquiry	16
Figure 6	Actors and Influence Map	20
Figure 7	Flipped Actors Map on Desired Education Outcomes	22
Figure 8	Three Horizons Workshop	28
Figure 9	Pathway Value Tensions	30
Figure 10	The Aspirational Future of Education – Workshop Results	31
Figure 11	Innovation Pathways	34
Figure 12	CLA Visualized as a Tree	36
Figure 13	Artifacts of the Future and of Transition	39
Figure 14	Interactive Chatbot Resource between Teachers & Upper System	42
Figure 15	Interactive Chatbot Resource between Parents & Upper System	44

Table 1	Education Actors and COVID-19 CLA	26
Table 2	Three Horizons Workshop and Analysis Content	29
Table 3	CLA Re-framed on Learning	37
Illustration 1	Example of a Mirror School	45

01. Introduction

Introduction

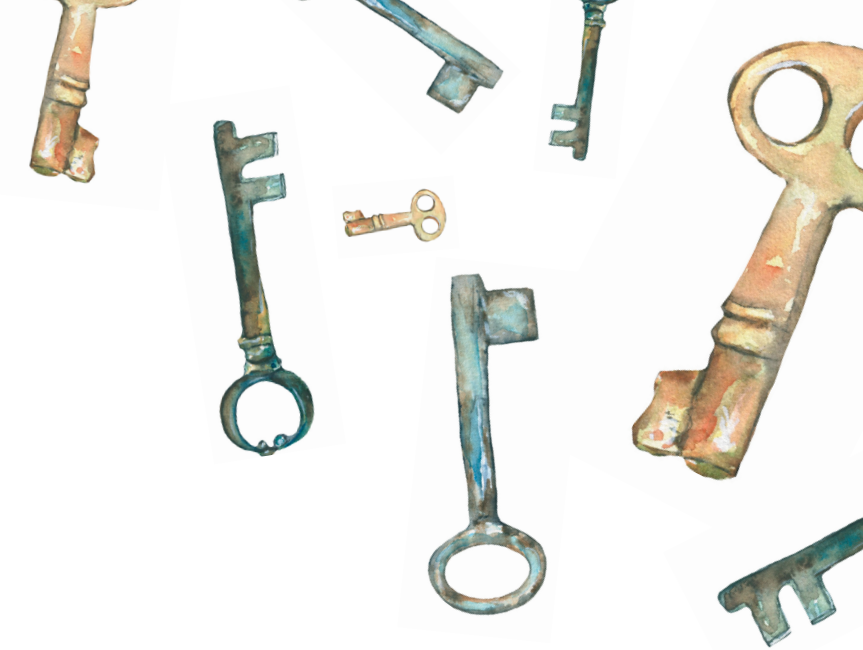
It's an age-old adage that education is the key to success. While this proverb echoes across patterns and time, we might wonder what type of education or definition of success the saying refers to. At least, I hope we *wonder*.


Preparing children for the future has been an integral component to growing societies and economies. Preparing *today's* children for the not-so-distant future is no exception yet might require a new approach as the playing field is dramatically changing. With critical uncertainties such as climate change, exposed systemic inequities, unclear digital ethics, and the complex recovery from a global pandemic, this generation is taking on a future that looks starkly different, and more unpredictable than the past. One of the previous generation's ideas of success is the American Dream. Such an ideal has become less relevant to this generation, or is perhaps a bygone dream; desired, yet out of reach. And yet today's dominant publicly funded education system continues to reflect the previous generation's *key*; unlocking pathways that might lead to a former version of success, or a current version of failure.

With students spending about 14 years in grade school, the education system takes on a crucial role in preparing children for the uncertain future. And so, although variations of this question have been asked before, it is worth asking again, and

again, and again until there is an authentic shift in paradigm and practice: **is our current education system adequately preparing children for their future?** I can't claim to have found a perfect answer, but I hope this project contributes to that activity of *wonder* when it comes to understanding our definitions of success, and the type of education that might bring us there.

In a famously well-delivered 2006 TED Talk called, *Do Schools Kill Creativity?*, Sir Ken Robinson said, "Our education system has mined our minds in the way that we strip-mine the earth for a particular commodity. And for the future, it won't serve us. We have to rethink the fundamental principles on which we're educating our children." On the premise of creative capacities, Robinson speaks to an education system that still serves and reflects its original context during the time of industrialization. Similarly, in *Range* (2019), David Epstein writes about cognitive flexibility and how "Our most fundamental thought processes have changed [since utilitarian lifestyle and industrialization] to accommodate increasing complexity and the need to derive new patterns rather than rely on familiar ones" (p. 45). Amassed human knowledge and experience has grown and evolved since industrialization, which curriculum has reflected. But with increasingly complex concepts in a modernized world, pedagogy is slower to follow, where perhaps it should be leading.





With the added backdrop of the COVID-19 pandemic, the traditional education system has been forced to attempt to adapt. An Ontario Public School Boards' Association (OPSBA) discussion paper (2021) articulates this very issue: "The pandemic has accentuated long-standing and largely unchanged school structures and processes directed by government policy and associated funding streams" (p. 1). Furthermore, during the time of this study, there is ongoing discovery of thousands of buried Indigenous children beneath Canadian residential schools causing heartbreak, resurfacing trauma, growing the demand for reconciliation, and highlighting a critical perspective on the country's oldest institutions. All this to re-iterate that the earlier posed question isn't novel. However, the global pandemic, along with today's inequities built on history's injustices, must be treated as a catalyst to seek action-oriented solutions toward a more promising future.

Why me, and why this topic?

As a graduate of the Ontario Public Education system, a professional amidst a career change, a futurist, a systems thinker, and a new mother, my reflection on my education is mixed. For the

most part, the system worked for me: honour roll student, scholarship recipient, employment during and immediately after university. But allow me to share this personal anecdote: in fifth grade our substitute teacher gave me a D in art because he claims that I didn't hand in an assignment, although I'm certain he misplaced it because that could not be more contradictory to my character. As a young school-loving child, that blemish on my otherwise pristine report card was crushing. Since that moment, I never identified myself as creative because I had thought that visual art is the definition of creativity, and that if that's true, a teacher believes that I am not creative. It took sixteen years, a little bit of work experience in design thinking, and a graduate degree in strategic foresight and innovation for me to finally realize that I am so creative. I am a problem-solver, a critical thinker, and an avid learner, all of which I now know makes me creative. This personal anecdote is only one of many and is likely not as serious as other challenges students might have faced. For the record, that substitute teacher was an anomaly compared to the many wonderful teachers who have taught me.

We narrowly define what success looks like, then subsequently shape and condone a similarly narrow structure of education, risking the development

of future diverse problem-solvers, empathetic critical thinkers, or nurtured innate learners. Sanjay Sarma (2020) describes this eloquently, "It's hard to pinpoint precisely how much raw human potential the global educational winnower routinely sacrifices for the sake of a consistent product, but there's every reason to believe the wastage is vast: a world's worth of attrition parceled out most visibly in rejection letters and underwhelming test scores, but also in less obvious forms: courses never taken, applications never sent, examinations never sat for, books never read" (p. xv).

Other than being a former student or a mother of a near-school-aged child, I am presently a peripheral actor to the education system. However, such characteristics that might disqualify me from proposing changes to education pedagogy, I believe are my precise qualifications. As said by Donella Meadows in *Leverage Points: Places to Intervene in a System* (1999), "When we [systems analysts] study a system, we usually learn where leverage points are. But a new system we've never encountered? Well, our counterintuitions aren't that well developed. Give us a few months or years and we'll figure it out" (p. 1). Here, Meadows speaks to how complex systems possess counterintuitive leverage points where, in the context of this project, actors in the education system might be

so deeply immersed, that the levers of change might not be apparent. And, if they are apparent, the issues might worsen upon internal intervention. Although I don't believe this to always be the case, Meadows goes on to say "And we know from bitter experience that, because of counterintuitiveness, when we do discover the system's leverage points, hardly anybody will believe us. Very frustrating, especially for those of us who yearn not just to understand complex systems, but to make the world work better" (p. 1). Yes, I yearn to understand the complexities of the education system, and to make the world work better.

Before we look at the findings, it is important to clarify the scope of this project, as well as outline the approach.

Project Scope and Purpose

This project investigates the Ontario publicly funded education system from kindergarten to grade 12. The purpose of this project is not to conduct a deep dive into the institution’s historical practices, but rather to explore today’s system maintaining knowledge of the past. This project will not explore the purpose of publicly funded education versus private schools but will focus on public education as the more widely available and accessible option. This project will not explore whether public education should or should not exist but will instead explore the possibility space from within. Although this project will touch on topics of equality, equity, and access, such issues will not be the primary focus of the study. While curriculum might not be the main topic of this project, pedagogy will certainly be at the center. Finally, the purpose of this study is not to suggest a radical reform of the current structures of society and the economy, but it does acknowledge that the evidence points to an education system that prioritizes the development of good citizens

(Westheimer, 2004), which can impact innate learning, creative capacities, and critical thinking. And, although this study is being conducted during the COVID-19 pandemic, it does not aim to advise on a post-pandemic back-to-school plan, but rather aims to gather insights from the global crisis to inform a way forward.

An important note on the use of the term “parent” throughout this study: I employ the word “parent” to represent all forms of diverse adult guardianship over a student or child.

What started as a question on how to increase creativity in children, the ultimate purpose of this project is to consider how the education system might intentionally nurture and develop children’s creative capacities to adequately prepare them for any possible future.

Defining the Problem



02. Methodology

Methodology

This project leverages frameworks from the fields of systems thinking and strategic foresight through three major sections: (1) identifying levers of change, (2) imagining a preferred future of education and (3) defining pathways to re-imagined schools of the future. Inspired by a

systemic design approach (Systemic Design Toolkit, n.d.), supported by system actor participant interviews, a literature review, and foresight workshop, this study's methodology is one that is iterative with recurring research input throughout, as seen in figure 1.

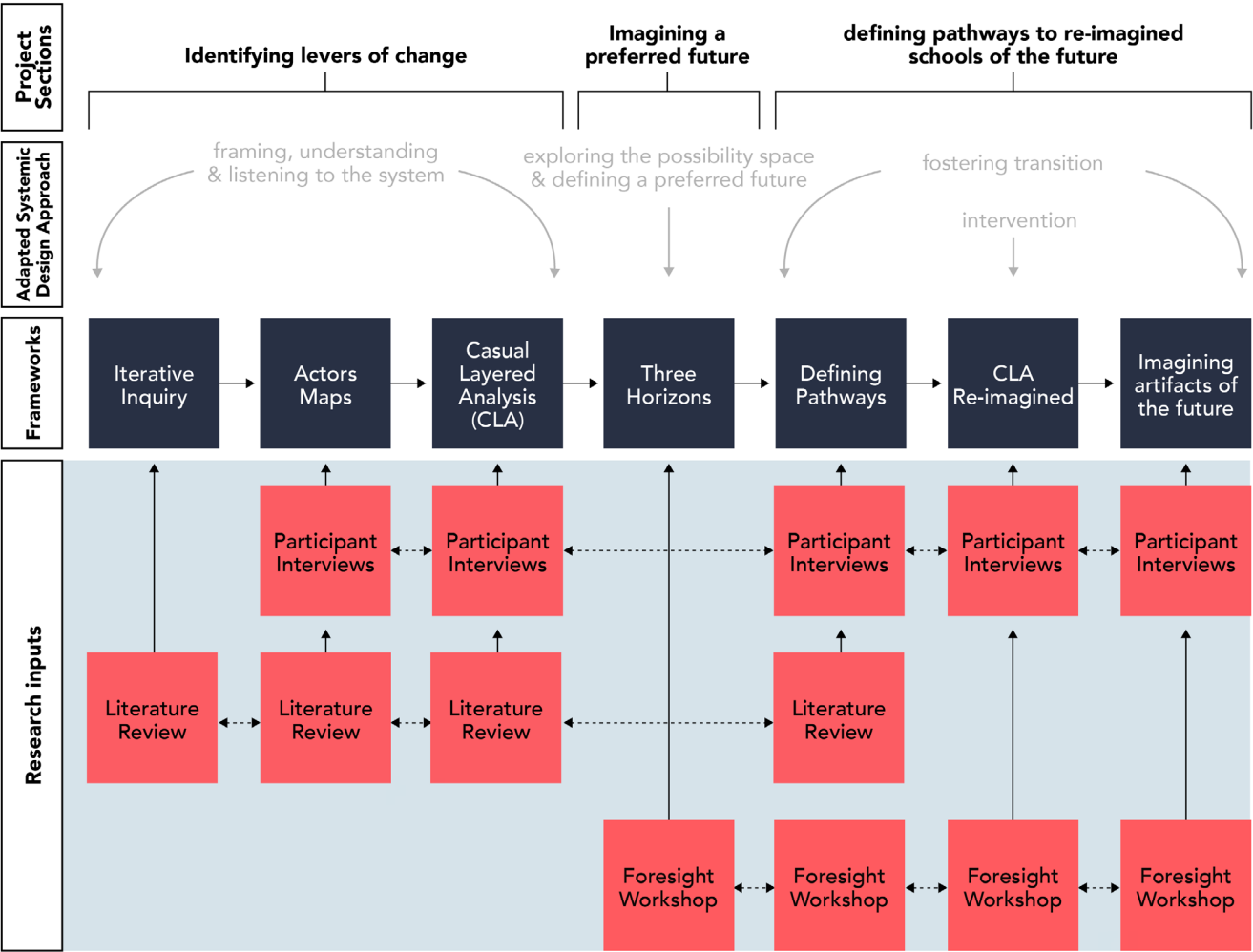


Figure 1: Research Methodology (Author's own)

Research Inputs

Literature Review

A broad literature review was conducted to inform and validate the systems analysis, as well as to inspire re-imagined schools of the future. The literature review included thought-leaders' perspectives on education, learning, diverse skills development for the future, and alternative pedagogy. Additional domains included public and non-profit sector COVID-19 and stakeholder research and reports, which were leveraged to inform the systems analysis.

System Actors Participant Interviews

Participant interviews were conducted with a small sample of Ontario education system actors to inform the present dominant ideologies of education, to share lived experiences during the COVID-19 global pandemic, and to gather perspectives on ideal education outcomes. While these interviews supported the systems analysis and pathways to a preferred future, the facilitated conversations primarily defined dominant orthodoxies in framing present ideologies of education. The participants were recruited through

social media channels, including professional and academic e-mail groups and LinkedIn, as well as through personal communications and network word-of-mouth. Participants were required to be actors from the Ontario public education system and to be of age of majority. These participants included three parents, two high school teachers, one elementary school teacher, one recently graduated former student, and one local community artist who facilitates workshops to a range of grade-level classes.

The nature of the questions posed during the one-hour interview elicited participants' perception of goals and purposes of the Ontario Ministry of Education, the local school, and the classroom. The questions also elicited participants' perspectives on what students, or children, believe to be the purpose of education. From there, the participants were asked COVID-19 specific questions regarding their experiences and lessons learned, whether positive or negative. In the final section of the interviews, the participants were asked questions of a more general nature: what they believe *should* be the purpose of education and what might be changed to nurture creativity and resiliency in children.

Foresight Workshop

Five of the eight interviewed actors volunteered to participate as co-creators in a two-hour foresight workshop. The five co-creators included the three parents, the elementary teacher, and the former student. Collaborating online through video conferencing while leveraging an online collaboration whiteboard space, we identified concerns of the present dominant system, and features of an aspirational future through the Three Horizons framework (Sharpe, et. Al, 2016). For

both the present concerns and the aspirational future, the participants posted their thoughts and ideas on virtual sticky notes during a quiet group brainstorming session. The brainstorming sessions were then followed by a group debrief discussion, which served as an opportunity for all co-creators to contextualize what they posted, to build on, challenge, or provide additional perspective to another co-creator’s post, and to deepen insights on frequently mentioned themes. The result of the workshop was a first step towards defining a preferred future of education.

Actors Map

Through an adapted actors map (Systemic Design Toolkit, n.d.), education system actors are charted against power (y axis) and knowledge (x axis) to effect change. On the same map, the relationship and influence between actors are visualized, based on stakeholder research. This map, and an inverted version later mentioned in the section on identifying levers of change, provides a view of where intervention might take place, who might effect such change, and how each actors’ paradigms impact the other.

Causal Layered Analysis (CLA)

The CLA is a tool that is an integrated and layered approach to explore worldviews to understand the current system, as well as to imagine alternative futures (Inayatullah, 2017). As seen in figure 3, the CLA is a tool that helps us simplify our view of a complex problem, through considering the observable issues (litany), investigating corresponding causes that might not be apparently visible (system causes); by unpacking commonly held perspectives of the system (worldview), to ultimately unearthing the underlying ideologies that can be regarded as the root cause of the visible litany (myths & metaphors). The CLA is an integral tool to this study, allowing us to investigate education system actor paradigms, and how they might shift for the benefit of schools of the future.

Systems Thinking and Foresight Frameworks

Iterative Inquiry

Iterative Inquiry (Gharajedaghi, 2011) aims to visualize a simplified view of a complex system. What makes this process iterative is to start with assumed realities and to continue to inquire until there becomes a more holistic understanding of the system. As seen in figure 2, we begin with the system’s inner-most function, then the structure through which the function is achieved, followed by the process by which the structure operates, which therefore leads to a purpose or context. The inquiry then continues by bridging the previously identified purpose or context, to derive its function, structure and so forth. In this study, this tool helps us to understand the context within which the education system operates, in turn, providing insight on the ultimate purpose of the present education system.

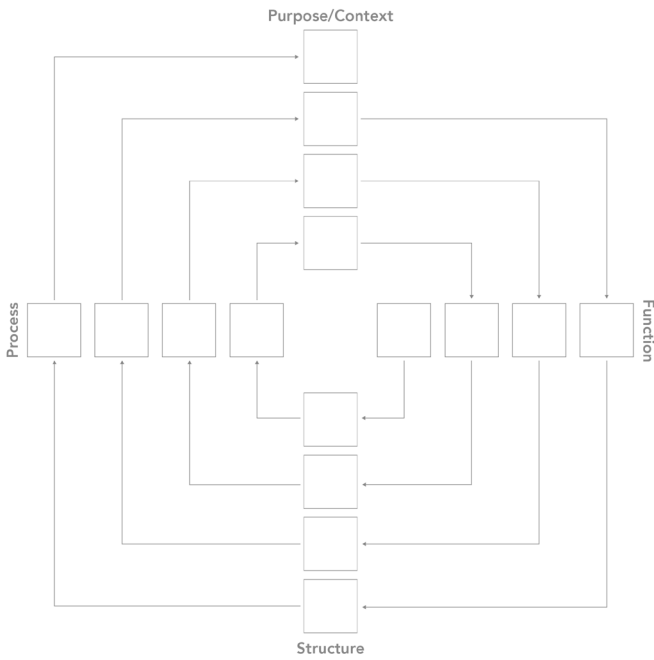


Figure 2: Iterative Inquiry (Adapted from Gharajedaghi, 2011)

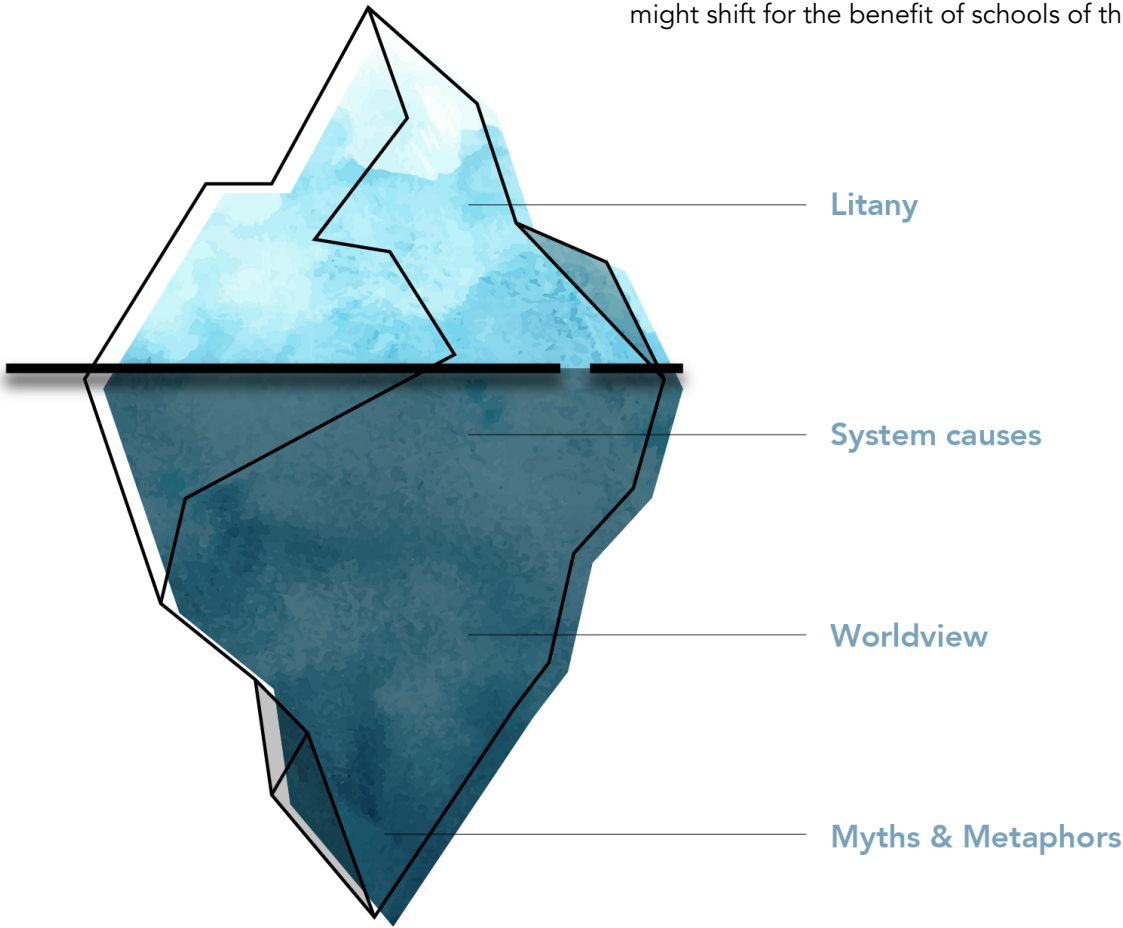


Figure 3: Causal Layered Analysis (Based on Inayatullah, 2017)

Three Horizons

The Three Horizons framework is a foresight tool that can be used to imagine a preferred future in relation to the present dominant system (Sharpe et. al, 2016). This is a useful tool to help identify pathways from the current state to an aspirational future state, while acknowledging that characteristics of all three horizons always exist. Some high-level features of the Three Horizons framework, as seen in figure 4, are as follows:

- The framework is charted against prevalence (y axis) and time (x axis)
- The map is broken up into three instances of time: (1) present, (2) transition, (3) future
- Horizon 1 (H1) represents the present dominant system, which declines overtime
- Horizon 3 (H3) represents the aspirational future system, which gains precedence over time
- Horizon 2 (H2) represents the transition from H1 to H3
- All three horizons exist across all instances of time, but with varying degrees of prevalence

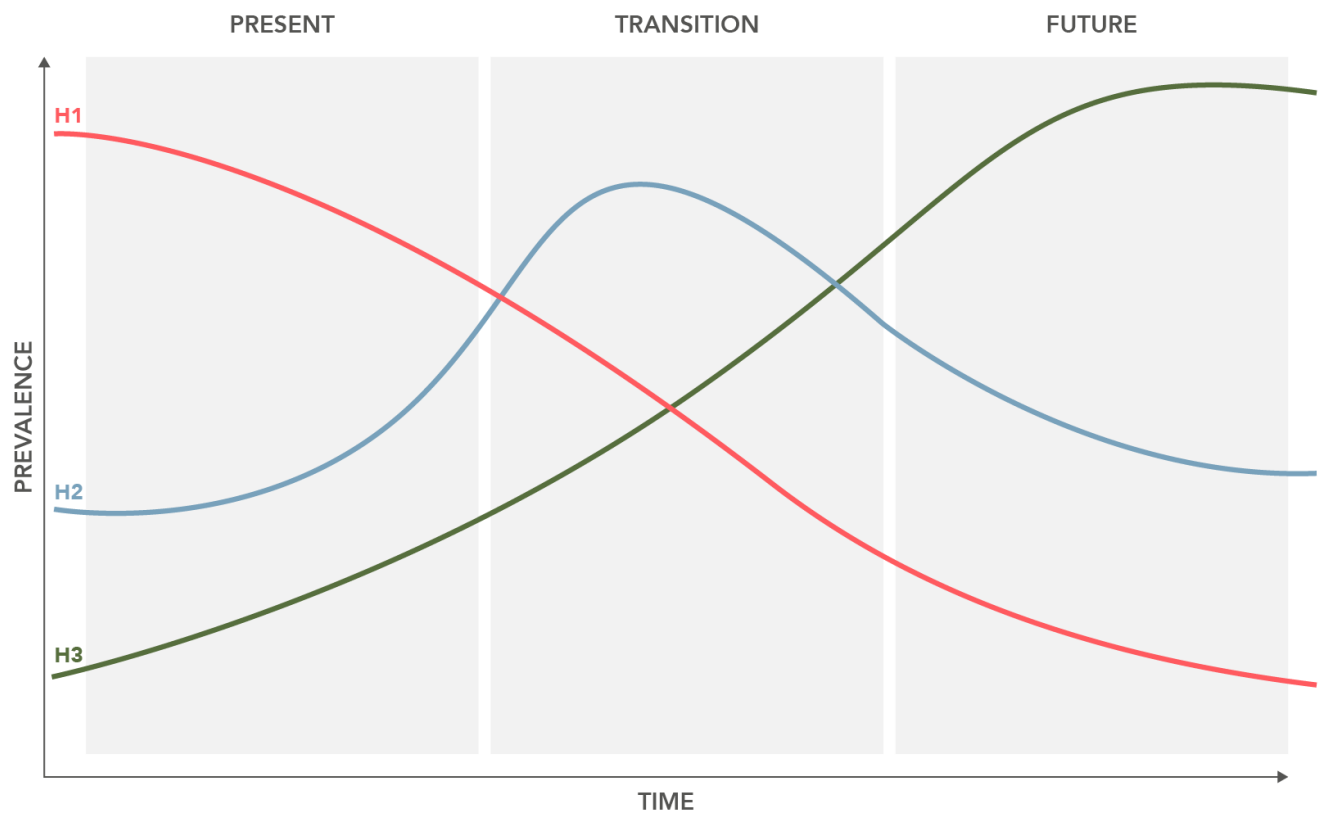


Figure 4: Three Horizons (Adapted from Sharpe et. al, 2016)

The Three Horizons framework by Bill Sharpe et. al. (2016) was selected for the co-creation foresight workshop for a few key reasons:

- **The use of practice-oriented knowledge in co-creation**
Informed by the perspectives of the fiveco-creators, I elicited their experiencesto highlight present concerns, and to brainstorm an aspirational system – entirely acknowledging that the gathered qualitative data is subjective. Although this methodology does not necessarily focus on epistemic knowledge, I believe this manner of co-creation can help bridge the gap between policy and practice.
- **The positive dialogue between declining and emerging systems**
The Three Horizons framework does not seek to wholly supplant the current system, but instead considers what can be learned to inform the future, and to maintain existing positive qualities as to avoid the cyclical rise and fall of alternating systems. I believe this helps us to adopt a critical, yet balanced approach, understanding that the current education system contains redeeming qualities.
- **The focus on pathways to the future**
This framework, and its subsequent phases, enable us to think about the transitions that must take place to move us from the current system to the aspirational system. This can help us map innovative, yet practical, ways to bring about change.
- **The space to test ideologies**
Through imagining the transitional phase from the dominant system to the aspirational, there is an opportunity to consider pivotal shifts, which include hegemonies, ideologies, orthodoxies, and paradigms.

Study Limitations

Time and Resources

This study is limited by the timeframe of approximately three months, the counsel of two advisors, and the human resources of one graduate researcher. As such, there was a limitation in activities and time spent on research to produce the findings of this study. Due to the ongoing global pandemic, evolving research on the impact on children and the education system contain early observations and short-term analyses. Boundaries of this study could have been expanded over more time and more human resources, as well as with more widely available accurate, reliable, and long-term data.

Sample Size and Range of Participants

This research was conducted during the ongoing COVID-19 global pandemic, which resulted in frequently changing education protocols, suspended external research at the board level across districts, and less available education system actors for interview. More precise and detailed qualitative data could have been collected with more participant interviews and workshop co-creators, as well as with more diversity in participants to include upper system policymakers.

Qualitative Data and Research Methods

Other than the literature review, this study relies on gathered qualitative data based on actor perspectives and lived experiences. Though not to invalidate participant contributions, the small sample size might represent a limited reality of all system actor experiences and beliefs. Additionally,

the co-creation between various actors during the foresight workshop can contribute to groupthink, where true tensions might have been avoided as not to oppose other co-creators' ideas or beliefs. As a result, this method could contribute to a limited ideation, creativity, and imagination of potential schools of the future.

With this approach, I hope that this study is found to be written in a language that is understandable, relatable, and inspirational. Where many reports and projects might include a great deal of academic jargon and might require pre-developed subject matter expertise or experience, this study is written with an underlying tone of storytelling and is written with the reader in mind. As such, I hope this study finds its way into the hands of

education researchers and policy makers that they might consider their influence as a lever of change. I hope that teachers might circulate this project to challenge and encourage one another's classroom practices. I hope that parents read this and think about how they can advocate for their children at school and at home. I hope children never stop asking questions right through adulthood.

03. Identifying Levers of Change

Identifying Levers of Change

Meadows (1999) describes leverage points as “places within a complex system (a corporation, an economy, a living body, a city, an ecosystem) where a small shift in one thing can produce big changes in everything” (p.1). To identify these critical levers of change, I take several approaches and perspectives to understanding the education system in Ontario. This section will cover:

- Mapping the context of education through iterative inquiry
- Identifying system actors, their influence, power, and knowledge in relation to one another through a hybrid actors and influence map
- Comparing education orthodoxies between actors with the use of the CLA

This section draws on the knowledge of thought-leaders in learning and education through a literature review, the mandated curriculum and resources by the Ontario Ministry of Education, as well as the lived experiences and perspectives of eight Ontario education system actors through participant interviews. Together, the collected information and anecdotes reveal the tensions between policy and practice, actor empowerment versus agency, and the paradigmatic differences that challenge standardization.

Iterative Inquiry: The Context of Education in Ontario

By contextualizing the iterative inquiry framework for the education system, as seen in figure 5, we see that the dominant path for students from classroom to economy is quite linear: schools help

ensure that education policy is fulfilled so that students are brought successfully from one grade to the next until they become full-time contributors to the economy through employment.

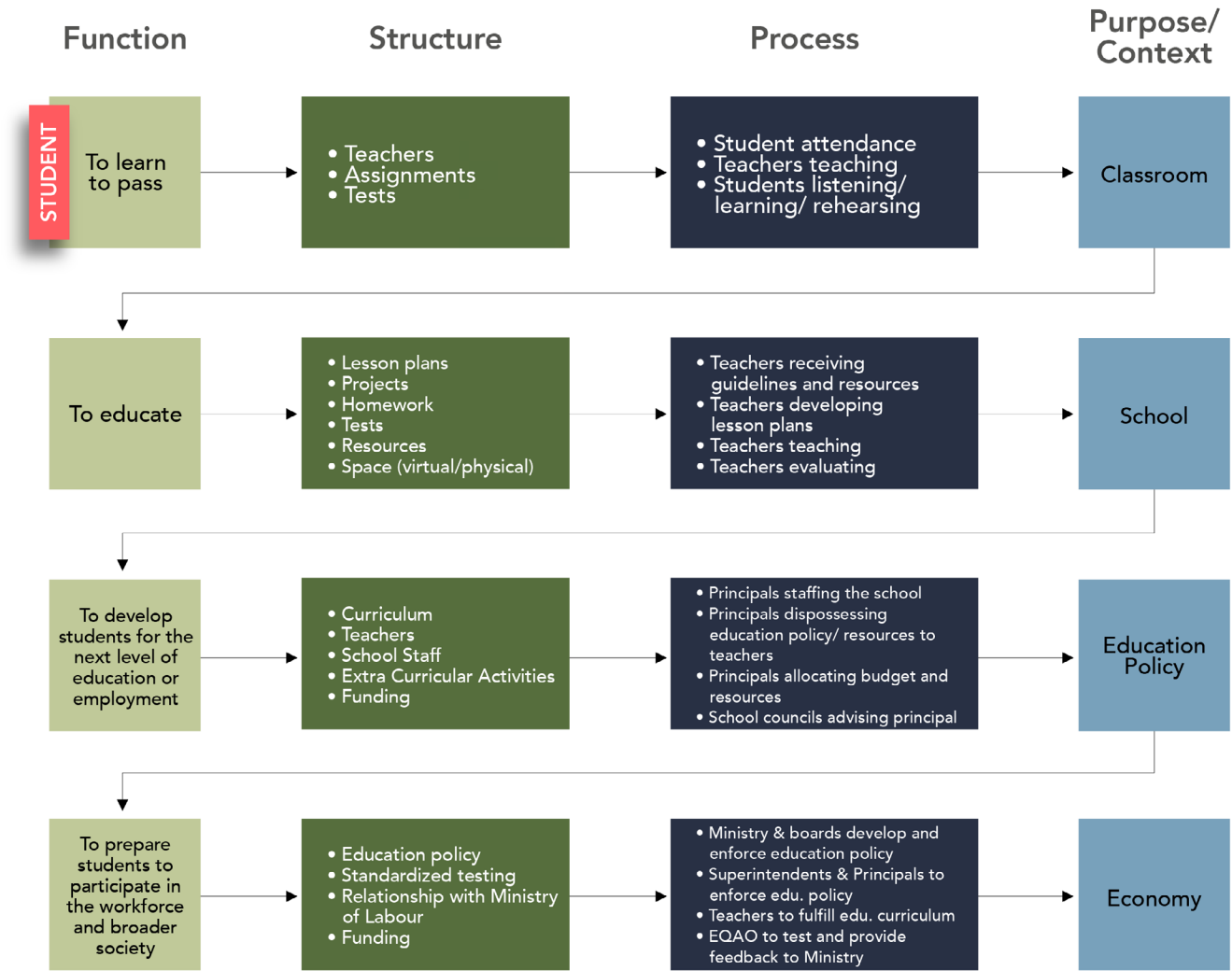


Figure 5: Education System Iterative Inquiry (framework based on Gharajedaghi, 2011)

This is not a novel discovery, which is widely acknowledged and largely accepted. In *Creative Schools: The Grassroots Revolution That's Transforming Education* (2016), Sir Ken Robinson and Lou Aronica highlight government view of education's economic implications because "... a well-educated workforce is crucial to national economic prosperity, and their policies are peppered with rhetoric about innovation, entrepreneurship, and 'twenty-first-century skills.' ... it's one of the world's biggest businesses" (p. 8), with a worldwide investment of four trillion dollars in 2013. This is to say that the education system operates like that of a business: large monetary input with the expectation of a return on investment (ROI). Similarly, all interviewed participants indicated that their perception of the purpose of education is for students to become responsible adults and to prepare them for higher education or employment. However, their perception is not to be confused with their opinion on what education should do and be – more on that later.

Through iterative inquiry, it becomes apparent that curriculum and standardization plays a key role in producing the successful desired outcomes of the education system. The emphasis on Science, Technology, Engineering, and Math (STEM), for example, was a response to market demand for professionals in those respective fields (Robinson

& Aronica, 2016). However, Robinson and Aronica (2016) argue, "The standards movement is not meeting the economic challenges we face. One of the declared priorities is to prepare young people for work. And yet, youth unemployment around the world is at record levels" (p. 14). They continue, "There is an ever-widening skills gap between what schools are teaching and what the economy actually needs" (p. 16). Consequently, placing focus on a few subjects removes emphasis on others, which causes a bias in the system: a funneling of students towards a particular idea of success.

Another perceived benefit of standardized testing is that it is an insightful source of accountability, measurement, and education quality assurance, along with claimed benefits of being considered a learning methodology by the nature of repetitive testing (Benjamin & Pashler, 2015 and Carey, 2015). But Sarma and Yoquinto (2020) challenge the one-dimensional learning approach where current pedagogy has more to do with "how we expect students to learn" (p.xxi) and how "in our efforts to standardize education, we've made learning too damn hard" (p. xxi). It is important to note, however, that standardization is only one of many approaches to education reformation. And, that co-creators of schools of the future should caution standardizing any one type of learning or pedagogy. In an introduction to Maria

Montessori's *The Montessori Method* (1964), J. McV. Hunt speaks to the danger of attempting to standardize Montessori, as with any alternative learning methodology, because "it loses the basic advantage of breaking the lock-step of having all children doing the same thing at the same time ... [which] means that the [Montessori] pedagogical implication of individual differences is missed..." (p. xxxiii). What this illustrates is that there cannot be a one-size fits all approach to education.

This, then, might cause us to wonder whether the education system even accomplishes its goal to its maximum potential. And, if it is true that a diverse range of skills, qualities, and experiences are what will collectively produce entrepreneurial ventures, innovative solutions, and participatory citizens, then the system does not seem to be accomplishing its goal (Epstein, 2019 and Robinson & Aronica, 2016). Whether the education system is characterized as an assembly-line or factory: producing a standardized product of students (Robinson & Aronica, 2016); or as a winnowing: stripping away innate human potential (Sarma & Yoquinto, 2020); or as narrow vocational training: limiting creativity and critical thinking (Epstein, 2019), it is evident that the education system's spotlight on a few learning objectives cast a shadow over others; deeming some learning outcomes more significant.

But here's the interesting part: the official Ontario K-12 curriculum reads as solid and inspirational. In 2020, the Government of Ontario released a new Curriculum and Resources website as a response to the shift towards remote learning during the COVID-19 pandemic. It is an interactive, user-friendly website with information on curriculum, program planning, assessment, and evaluation. The website also includes a resource page for parents. Other than the standard subjects, the curriculum explicitly indicates the incorporation of critical thinking and problem solving, innovation, creativity, and entrepreneurship, self-directed learning, collaboration, communication, global citizenship and sustainability, and digital literacy. The curriculum claims that students are learning financial literacy, environmental education, social-emotional learning (SEL) skills, and STEM. Additional assessment criteria are outlined in a guide titled *Growing Success: Assessment, Evaluation, and Reporting in Ontario Schools* (2010). In this guide, the Government of Ontario indicates its philosophy of assessment for learning and as learning. Within this philosophy, the report indicates a process of students and teachers co-creating a "common understanding of what constitutes success in learning" (p. 33). And the Education Quality and Accountability Office (EQAO) defines itself "as an evidence-

based research-informed organization ... [that] is focused on empowering educators, parents, guardians, stakeholders and the public at large with the insights and information needed to support student learning and improve student outcomes” (EQAO, 2020, n.p.). Quite explicitly, the content throughout the curriculum and pedagogy, the assessment approach, and the quality and accountability practice, contains language that reads as diverse, inclusive, adaptable, and all-encompassing.

So, problem solved, right? Perhaps now, you’re wondering, what, then, is the discrepancy? What is the gap between policy and practice? The teacher interview participants shared that one of the dominant visible discrepancies is that teachers’ time and resources are spread thinly across administrative tasks, lesson planning, preparing students for standardized tests, delivering content, managing parent-teacher relationships, and navigating their own professional careers. As much

as some teachers desire to incorporate creative learning methodologies, alternative assessment opportunities, student-led inquiry and learning, or practical life skills and application – all that good stuff, which the curriculum does contain – the teachers are simply overwhelmed with competing priorities within the curriculum requirements.

Because, at the end of the day, the tangible artifact a student brings home a few times each year; the artifact which indicates their performance across a string of subjects, along with an ambiguously scaled evaluation of a few soft skills; the artifact which determines a students’ advancement to the next level, or their academic placement in higher education - is a report card. And so, there lies the teacher and student’s competitive priority. So now, let’s wonder what needs to shift, and where?

Actors and Influence:
Who does/think what, and in relation to who?

System actors play a powerful role in any system or organization, as these are the policy-makers and -enforcers, policy-doers and -participants. In figure 6, I map out the actors of the Ontario education system according to the actor descriptions from the websites of Ontario Ministry of Education (2021) and People for Education (n.d.), a non-partisan organization that facilitates evidence-based, action-oriented conversation on public education in Ontario. Synthesizing the explicit role descriptions

of each system actor reveals the dynamic of power versus knowledge to effect change. While it is unsurprising that the Ministry of Education is at the top of this map, with students at the bottom, there are a few interesting findings on where intervention might take place based on the systemically defined role descriptions:

- **EQAO:** Because of its direct influence on policy a change in behaviour could have long-term implications on the entire system. While the abolishment of standardized testing could cause a radical shift, even a change in how, or what, is evaluated could have the potential to change the course of the curriculum.
- **School board Trustees:** Elected Ontario school board trustees do not necessarily require a background in education, which, in theory, lends itself to diversify decision-making perspectives in education – of course, assuming the absence of personal or political motives. Trustees appear to bridge the gap

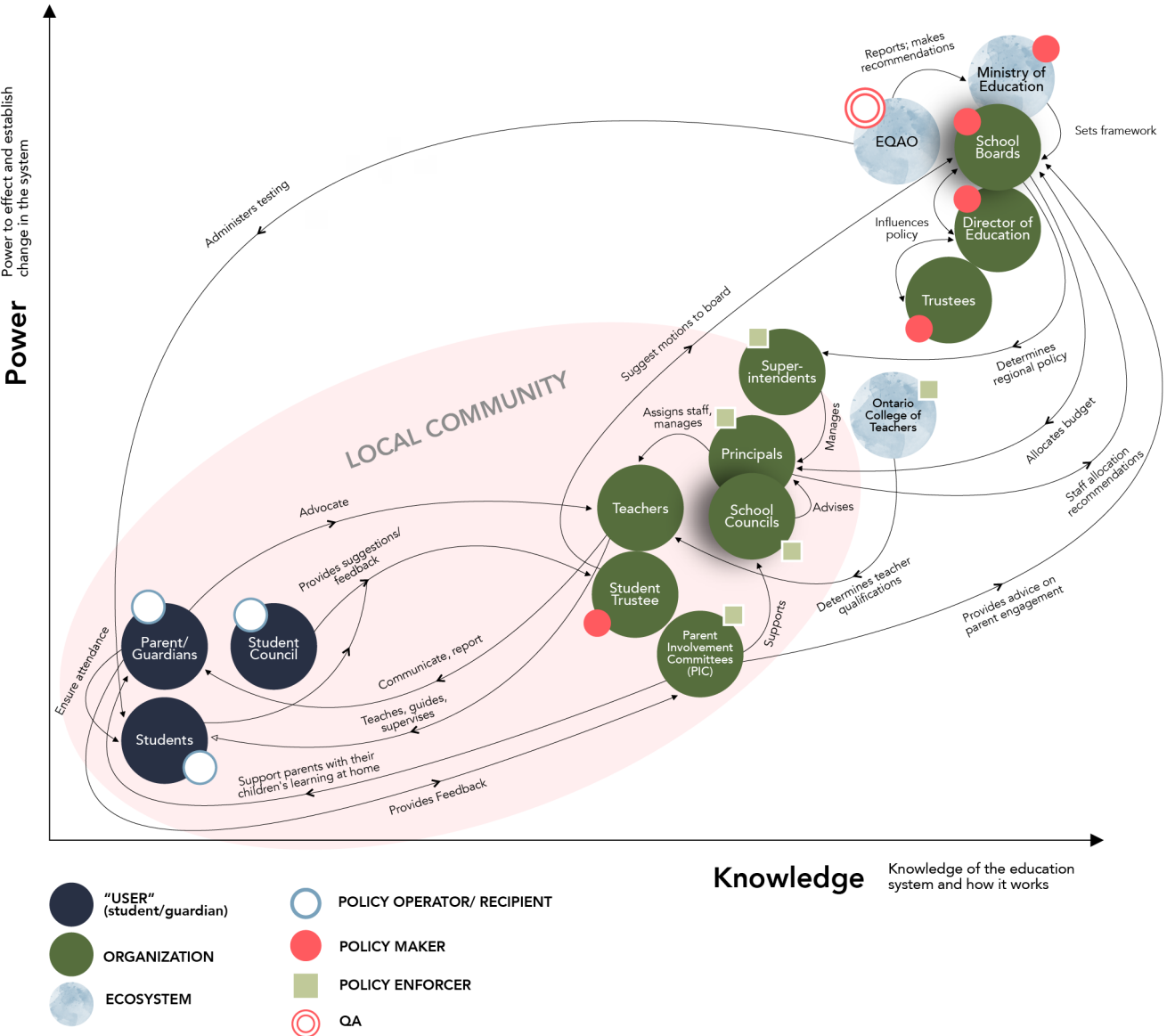
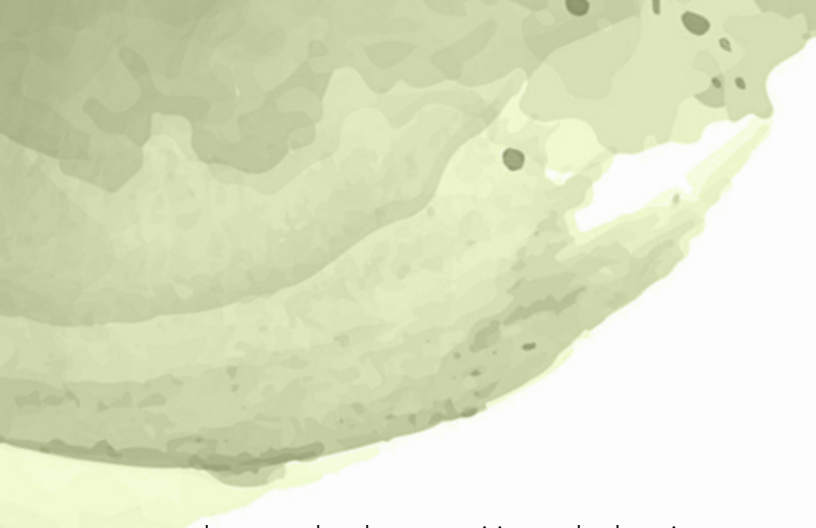


Figure 6: Actors and Influence Map (Based on and adapted from actors map in Systemic Design Toolkit, n.d.)



between local communities and education policy, as such they can have both upstream and downstream impacts.

- **Teachers and Teacher Training:** This is an area where visible change is already taking place, however it differs across school boards, schools, and even teachers themselves. Teachers are responsible for translating education policy, pedagogy, and curriculum requirements to their classrooms. Teachers are levers of change in their own right and many are exemplary at getting creative within the framework. Where this change could be furthered is at the teacher's college level, with added diverse compulsory offerings that could be tied to incentives.

Other noteworthy findings that speak to the limited agency of a few education system actors:

- Parents and guardians are ascribed a single responsibility, which is to ensure that their children, ages 6-16, attend school.
- In a similar fashion, students are held accountable for two responsibilities, which are to attend class and complete tests, and "exercising self-discipline and behaving courteously toward both their teachers and their fellow students" (Ontario Ministry of Education, 2021, n.p.).

- The student trustee role is performative, as they do not hold a binding vote, nor the entitlement to make a motion. Also, the student trustee does not appear on the Ontario Ministry of Education's list of those responsible for students' education, but does find itself on the list by People for Education.

Mapped against knowledge and power in the education system, we see a cluster of actors at the top third who are actively determining policy, establishing curriculum, and enforcing the dominant pedagogy. At the middle third, we see a cluster of actors who are acting creatively within the framework and swimming upstream to challenge or encourage policies. Then, at the lower third, we see actors who are deemed the receivers of education in this model, and who are ascribed little responsibility, therefore having less agency over their education.

But what if we flipped the script and charted the actors against their orthodoxies on the purpose of education: to either grow and participate in the economy (y axis) or to provide holistic development for students (x axis)? In figure 7 I map out the responses from participant interviews based on their perception of what they believe is the goal and purpose of (1) the education system, (2) the school, which represents the local level, and (3) the classroom, which speaks to the teacher's domain. I also asked the participants what they believe students think is the goal or purpose of education. It should be noted, however, that this group represents a very small sample size of all education system actors, therefore a potential next step in research would be to scale a farther-reaching survey to determine the extent of such

behaviours and perspectives. With that said, results based on this group, appear to be largely inverted from the original actors mapped on power and knowledge, except for the so-called "recipients" of education. The area of tension represents a shared belief that education should do both: it should help students participate in the economy, and equally consider holistic student development, which might be a tension most strongly felt by

students, themselves. The interviewed group defined holistic development as meeting students' mental, emotional, and social exploratory and developmental needs, as well as meeting diverse skills development, such as practical or real-life skills regarding financial literacy, home economics, critical thinking, or creativity and resiliency. Observations to note within the area of tension:

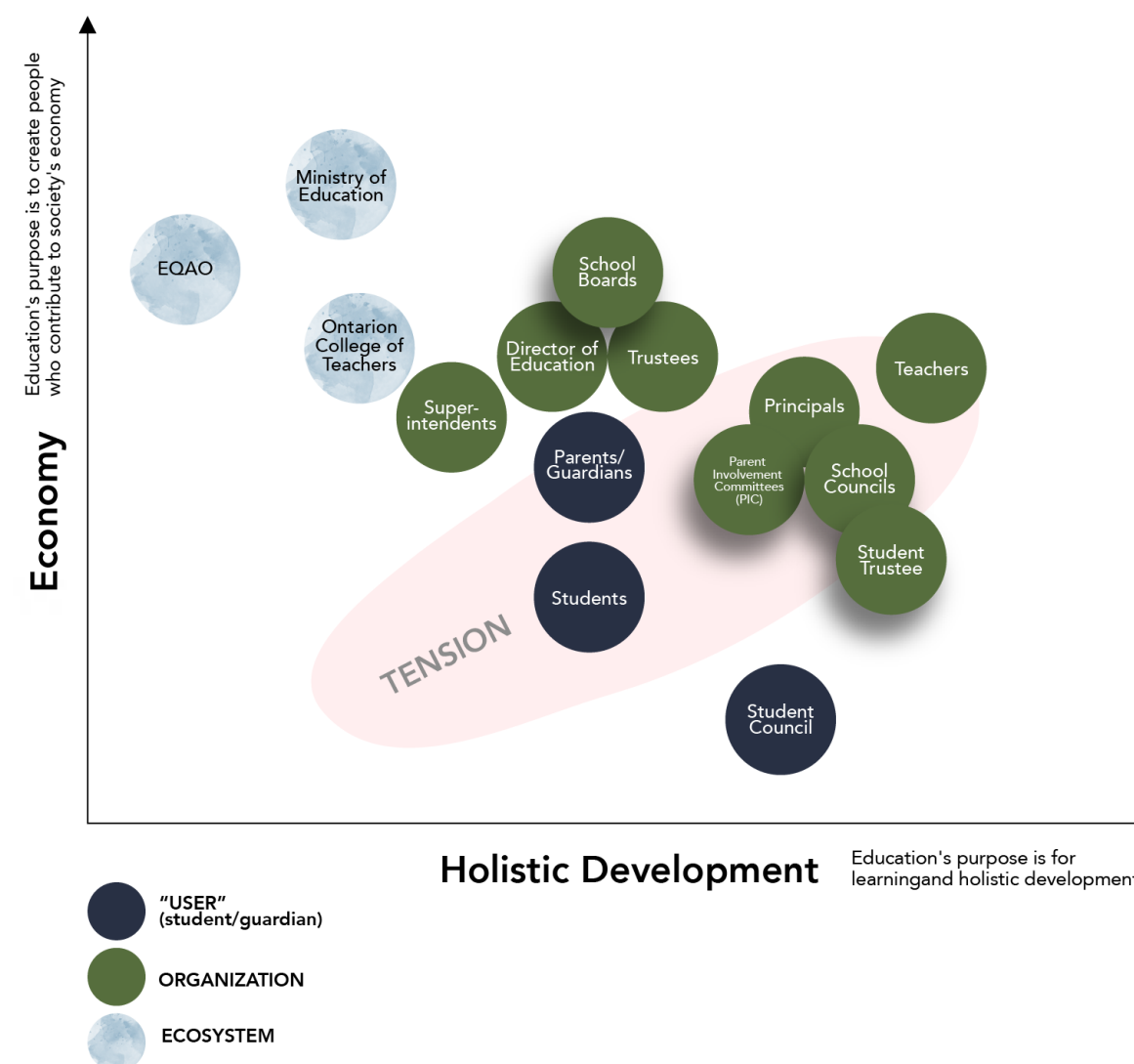


Figure 7: Flipped Actors Map on Desired Education Outcomes (Author's own)

- Parents are placed on the border of tension, slightly favouring the economic outcomes of education by nature of the desire for their children to become responsible adults, but to also seek credible employment.
- At the local level, principals, teachers, parent involvement committees (PICs), and school councils are managing the complexities of both. For example, one of the interviewed teachers noted their school's response to #BlackLivesMatter and Indigenous reconciliation to reflect the needs and interests of the community they serve. This teacher also mentioned that their school offers student courses on developing social and emotional skills to foster students' sense of self and their

interaction with the world around them. The school also offers social justice and equity training for teachers and staff. By this example, the local education ecosystem seems to fill in the contextual gaps, which the curriculum might not account for.

It is from this perspective, that we begin to see that a powerful lever of change is rooted in a needed paradigm shift: actors' beliefs and orthodoxies on education. And so, drilling down from investigating why the system works the way it works through iterative inquiry, then understanding the actors and their influence on the education system, to actors' perception on the purpose of education, this study aims to explore the root of the current education system's litany.

Causal Layered Analysis (CLA): Exposing Education Ideologies

The interview participants' perspective on the purpose and goal of education was altogether in alignment with the Ontario Ministry of Education's definition, which is "to provide students with the opportunity to realize their potential and develop into highly skilled, knowledgeable, caring citizens who contribute to their society." (Education Act, R.S.O. 1990, c. E.2., 2021). Although the consensus on education was unanimous, participants' view on education is nuanced from the Ministry of Education on exactly how students'

potential is identified and subsequently achieved, what skills and knowledge are being focused on, and what it means and looks like to be a caring and contributing citizen to the society. This brings us back to that proverbial saying and the first question we are wondering about: what is the definition of success, and what type of education? Let's break down the definition and identify gaps in alignment with participant perspectives and lived experiences.

...to provide students with the opportunity to realize their potential...

On the issue of potential, teachers and parents noted students' fear of failure where achieving a specific grade has become the epitome of education, especially for those in high school. The current method of evaluation is one that is linear, as opposed to inherently iterative. Additionally, teachers mentioned the focus on preparing students to pass EQAO testing for grades 3, 6, 9, and 10, where curriculum for those years revolves around testing content, limiting the opportunity for inquiry-based learning and other non-traditional learning opportunities. As such, the consensus was that student evaluations at

the local and national level seems to cap student potential to an externally determined standard. It is important to note, however, that none of the participants suggested the complete removal of student evaluations but had felt that there was an imbalanced emphasis placed on this one aspect of education.

Considerations: How is potential discovered or defined? What limits students from realizing their potential? How might we expand or break through set boundaries to offer diverse opportunities for exploration and discovery?

...and develop into highly skilled, knowledgeable, caring citizens...

The issue of skills, knowledge, and the growth to become caring citizens was a common emphasis in all participant discussions. All participants pointed out skills beyond academics or trades; they brought up pressing issues of critical thinking, preparing students for opposing opinions, practical skills like financial literacy or home economics, self-organization, self-management, and self-regulation; self-awareness, self-expression, and social-emotional learning; communication and self-advocacy skills, independence, and environmental inter-dependence. Additionally, parents and teachers mention that circumstances are highly

varied and dependent on the nature of the school and classroom teachers. It is between teachers and parents, where the responsibility to bridge the gap between what students should learn at school versus at home, becomes unclear: whether it is up to the curriculum to be explicit, or up to the school boards to train teachers, or whether certain skills and knowledge should be developed solely by parents.

Considerations: Which skills are valued most and why? What knowledge is regarded as most important? How does the ideal citizen behave?

...who contribute to their society.

The Ontario Ministry of Education’s definition of education emphasizes how a student might become an outward contributor, but places less emphasis on the internal learning, discovery, maturity, and growth. The official definition might imply contributing ideas, aid, or support to society, and can also be interpreted as economical. As earlier mentioned, the purpose of this project is not to refute the idea that publicly funded education leads to economic participation, however this can too easily become the system’s driving focus.

Through the interviews, this group indicated that being apart of, and meaningfully contributing to, society is what participants hoped most for their students, children, and selves. It seemed as if the purpose of education had more to do with the discovery of the purpose of self.

Considerations: What does meaningful contribution to society look like from a society’s perspective? From an individual’s perspective? What might it look like 10, 20, 50 years from now?

After framing and listening to the system, an identifiable leverage point worth further investigating is system actors’ education ideology. With a narrative approach to systems analysis and foresight, I employ a CLA to synthesize the qualitative data gathered from interviews and literature review. Table 1 shows the use of CLA as an analysis of present-day realities in the education system by identifying the observable problems to expose different actors’ underlying ideologies of education, as well as the systemic issues that were amplified by the COVID-19 pandemic. What can be extracted from this analysis are the differences and similarities between actors, across each layer. Here, we find that a shared myth and metaphor on

education is that “education is the key to success.” Throughout this overlap each core ideology contributes to systemic frictions, splintering experiences, and undesirable manifestations. This shows the tension between the goal of the education system versus the desired learning outcomes of teachers, parents and students. This is where the mutual expectations between parents and teachers become fragmented. This is where student agency is dissolved to performative empowerment.

But what if the myth and metaphor was different? Can you already imagine an alternative future?

	Students	Parents	Teachers	Upper Education System*	COVID-19
Litany	Learning is difficult	Child not performing well in school	Not enough time to cover all curriculum requirements in the school year	Too much bureaucracy to pass effective/relevant policies	Schools, children, and parents weren't prepared or remote learning
	Can't find a good job after education	I don't know how to support my child's learning	Admin work gets in the way of actual teaching and learning	Not enough funding to meet the needs of every school	Students lacked socialization
	Don't see connection to real world application	I don't think my child is being equipped for practical life		Can't radically reform education	Inequitable access to technology was amplified
System Causes	Standardized evaluation	Standardized evaluation	Overwhelming curriculum requirements with competing priorities	Curriculum tied to political agendas	Lacking emergency response protocol
	Inflexible and slowto- respond curriculum/ pedagogy	Little agency, resource, or role defined for parents	Standardized evaluation and a lack of resources for teachers	Funding dependant on taxpayers and other investments; inequitable allocation	Inflexible and undiversified pedagogy
	Overemphasis on academic subjects	Overemphasis on academic subjects		Curriculum and pedagogy has to appeal to the majority	
Worldview	You need education in order to get a good job	Education is the key to success/ opportunities	Prepares children to be responsible adults in the future	Education as a business	Education must go on so students don't fall behind
	Grades indicate what kind of student you are	Education is required in order to get a good job	Teachers teach, students learn	An educated population is an indicator of a healthy society and economy	Parents can't work and care for their children at the same time
	Better grades lead to better opportunities after school	The higher the education, the better	Education is the key to success	Education is the great equalizer	
	School is where my friends are	Prepares children to be responsible adults in the future	School is a place where socialization happens	Shapes responsible citizens who contribute to society	
		School is a place children go so parents can work		Education helps break the poverty cycle	
Myths & Metaphors	EDUCATION IS THE KEY TO SUCCESS	EDUCATION IS THE KEY TO SUCCESS	EDUCATION IS THE KEY TO SUCCESS	EDUCATION IS THE KEY TO SUCCESS	OUTDATED INSTITUTION
	A PASSAGE TO REAL LIFE	EDUCATION IS PART OF THE AMERICAN DREAM	STUDENT AS A VESSEL	EDUCATION IS A CORNERSTONE TO A HEALTHY DEMOCRACY	

Table 1: Education Actors and COVID-19 CLA
*Upper education system is here defined as system actors above teachers

04. Imagining a Preferred Future of Education

Imagining a Preferred Future of Education

The COVID-19 pandemic is a disruption that brought about urgent changes to the Ontario education system. However, much of that change was reactive and rapidly implemented without the opportunity to consider long-term impacts. This is where strategic foresight can be a powerful toolbox for any organization or system, in this case,

for the education system. In foresight practice, we imagine possible futures through exploring the intersectionality of today's complex problems and tomorrow's critical uncertainties in order to identify preferred futures and to inform strategies on how to get there (Sharpe et. al, 2016).

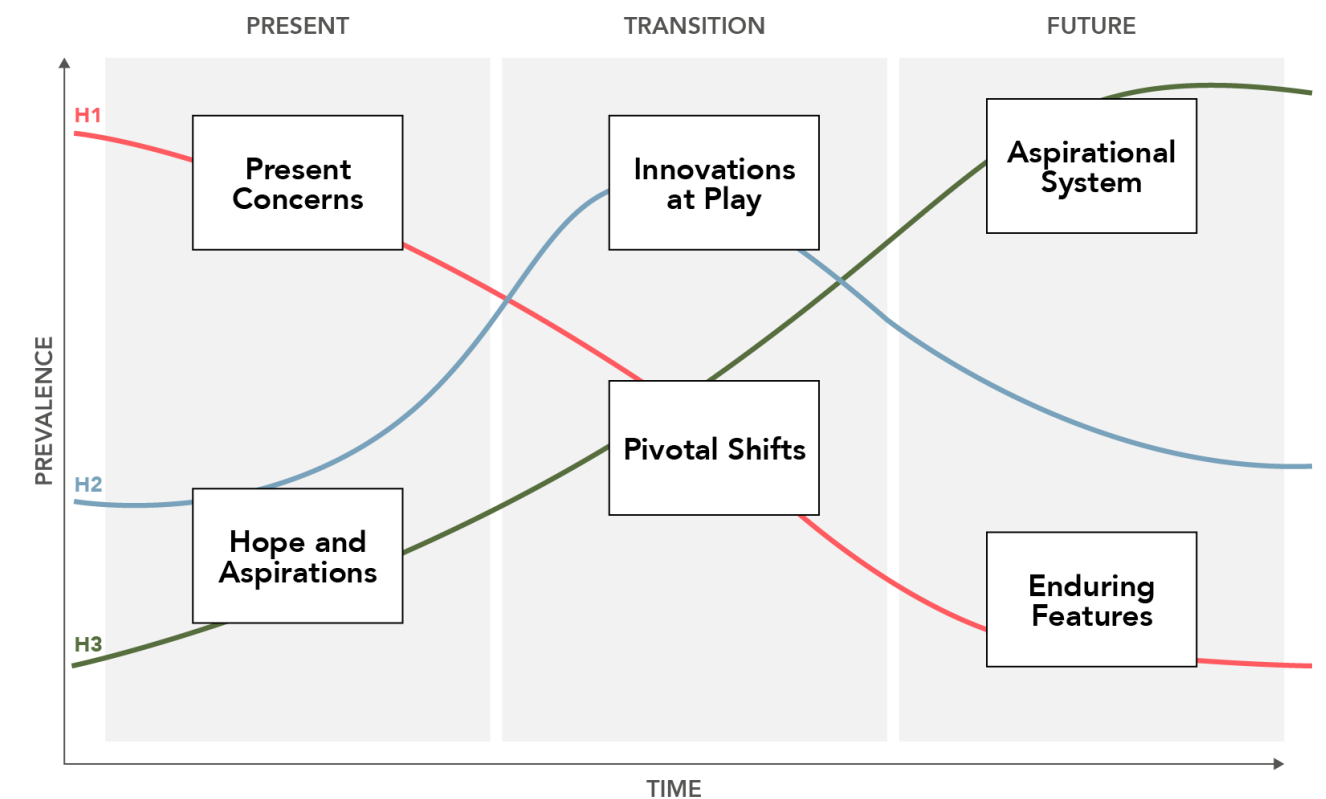


Figure 8: Three Horizons Workshop (Adapted from the Collective Leadership for Scotland, 2020)

Limited to a two-hour workshop, I provided the co-creators with a brief introduction to the Three Horizons framework and proceeded to brainstorm, share ideas, and discuss the present concerns with today's dominant education system (H1), and the qualities of an aspirational future system (H3) as demonstrated in figure 8. We imagined schools of the future over a time horizon of 10 years. Table 2 includes the abbreviated versions of the raw online workshop whiteboard. Due to limited time, we were unable to discuss the hopes and aspirations of H3 in the present time, the enduring features of H1 to maintain in the future time, nor the innovations at play of H2 in the transitional time, which are areas within the framework also shown in figure 8. However, between the participant interviews and the active discussion throughout the workshop, I populated those remaining areas, which are also seen in table 2. Additionally, as adapted by the Collective Leadership for Scotland (2020), I considered pivotal shifts in the transitional time (also found in table 2), as well as mapped out value tensions and pathways modified from a template framework by the International Futures Forum (IFF) (n.d.), which will be discussed in the next section.

PRESENT	Present Concerns (H1): One dimensional report cards; long hours in-doors; standardization; lack of real-life application; disproportionate focus on academics; factory approach to education; traditional classroom style; burdensome curriculum; low parent engagement and involvement; undefined emergency response; lacking alternative education approaches; inequitable access to technology; inflexible pedagogy; limited resources for teachers
	Hope and Aspirations (H3): Alternative education; experiential learning; positive relationship with technology; diversity embraced; extra-curricular and supplementary programs; democratic process; co-op opportunities; mental and emotional health; over-all health and well-being
TRANSITION	Innovations at Play (H2): Culture of co-creation and collaboration; foresight practice; re-ordering of the physical classroom/ school; scaling early childhood education (ECE) methodologies; industry and sectoral collaboration; self-reflection for students and teachers; multi-disciplinary intersectional approach; access to relevant and helpful resources; defined roles and responsibilities; social-emotional self-management courses; awareness of jobs of the future
	Pivotal Shifts (where H1 and H3 intersect): Re-thinking the way the economy grows/works; decolonizing systemic structures; re-evaluating quality and accountability measurements; change the way we think about education; redefine systemic success; regarding every actor as value-add and important; shifting value from what was learned to how learning happened
FUTURE	Aspirational System (H3): Self-awareness and discovery as integral component; technology as a tool and not a learning outcome; whole child development; later specialization; curriculum for range and diverse skillsets; iterative learning and iterative curriculum; students to have agency over their education; nature as teacher; open pedagogy; parents as partners and co-creators; a responsible, responsive, and learning system; diverse evaluation; alternative teaching methodologies; resourced and empowered teachers; schools that reflect their communities; school as a village; teacher as facilitator; non-traditional classrooms; re-design schools; curriculum co-creation
	Enduring Features (H1): Educators; group settings/ group learning; in-person; democratic approach to curriculum changes; publicly funded education

Table 2: Three Horizons Workshop and Analysis Content

Horizon Value Tensions

In IFF’s original template (n.d.), the H1 and H3 descriptors are grouped into themes in the form of value statements with corresponding values on both sides, as seen in figure 9. Instead of connecting direct pathways (though that is still shown in the figure represented by the solid and

direct blue lines), I also map the indirect value tensions; showing that one H1 value might impact multiple H3 values, and vice versa. It’s important to note that the value statements are written as neutrally as possible, once more emphasizing the positive dialogue between the systems.

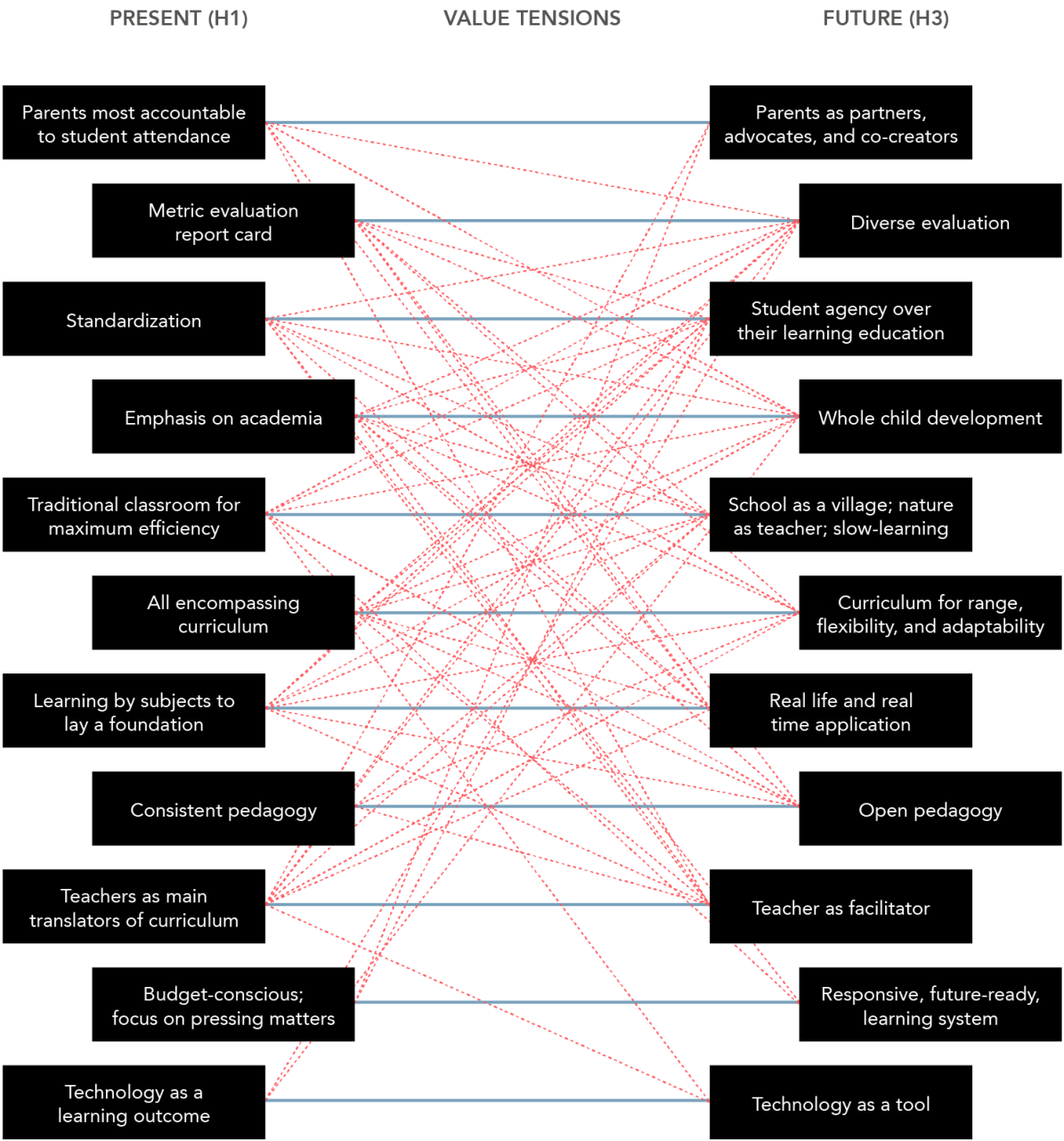


Figure 9: Pathway Value Tensions (Adapted from International Futures Forum, n.d.)

The mapped value tensions between H1 and H3 demonstrate horizons that are more interconnected than opposites. This also shows how values in one horizon can impact the converging or diverging values in the other. By mapping out these value tensions, we can begin to imagine pathways from the present to the aspirational future, which will be expanded on in the next section.

To simplify the co-creators' aspirational future of education, figure 10 visualizes the key characteristics organized into groupings of (1) system contributions, (2) the function and process of school, and (3) the resulting ideal: holistic child development. Despite the constraint of depicting potential innate feedback loops in figure 10, the aspiration future of education should possess qualities and practices of iteration, co-creation and collaboration, and foresight.

Although hopeful characteristics of H3 might be observable in the present time, our next step is to consider pathways from H1 to H3.

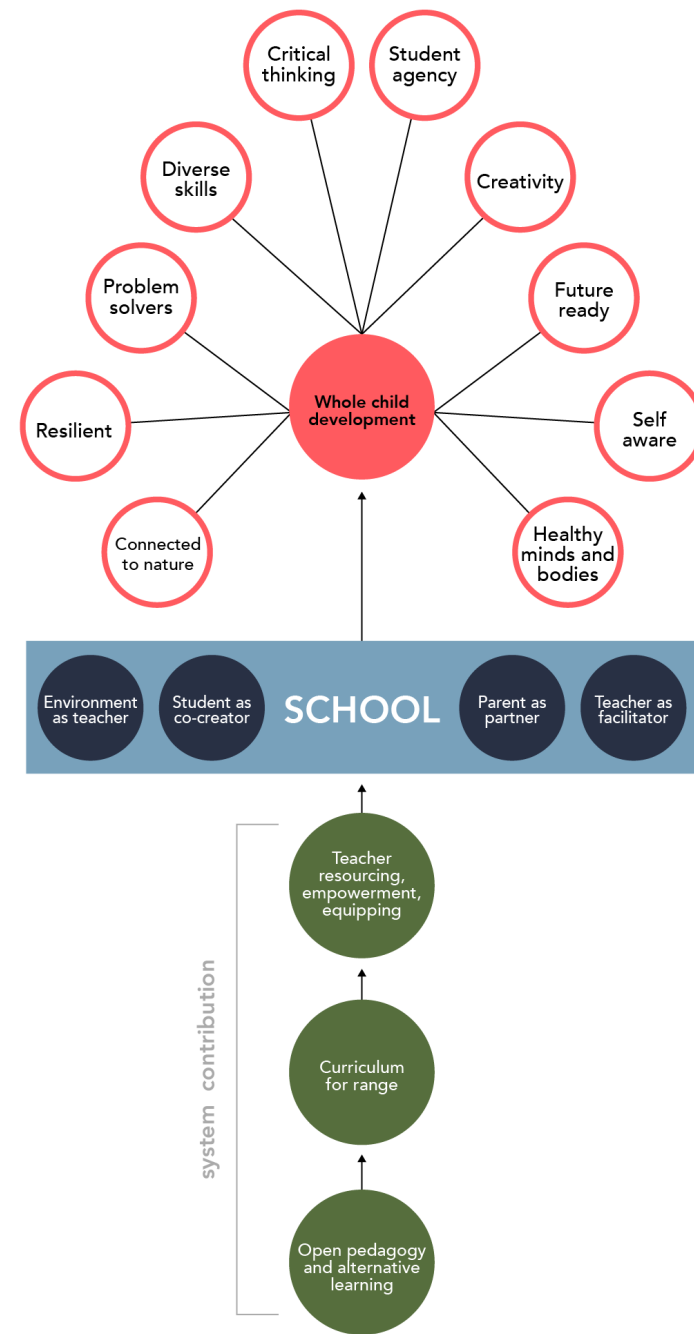
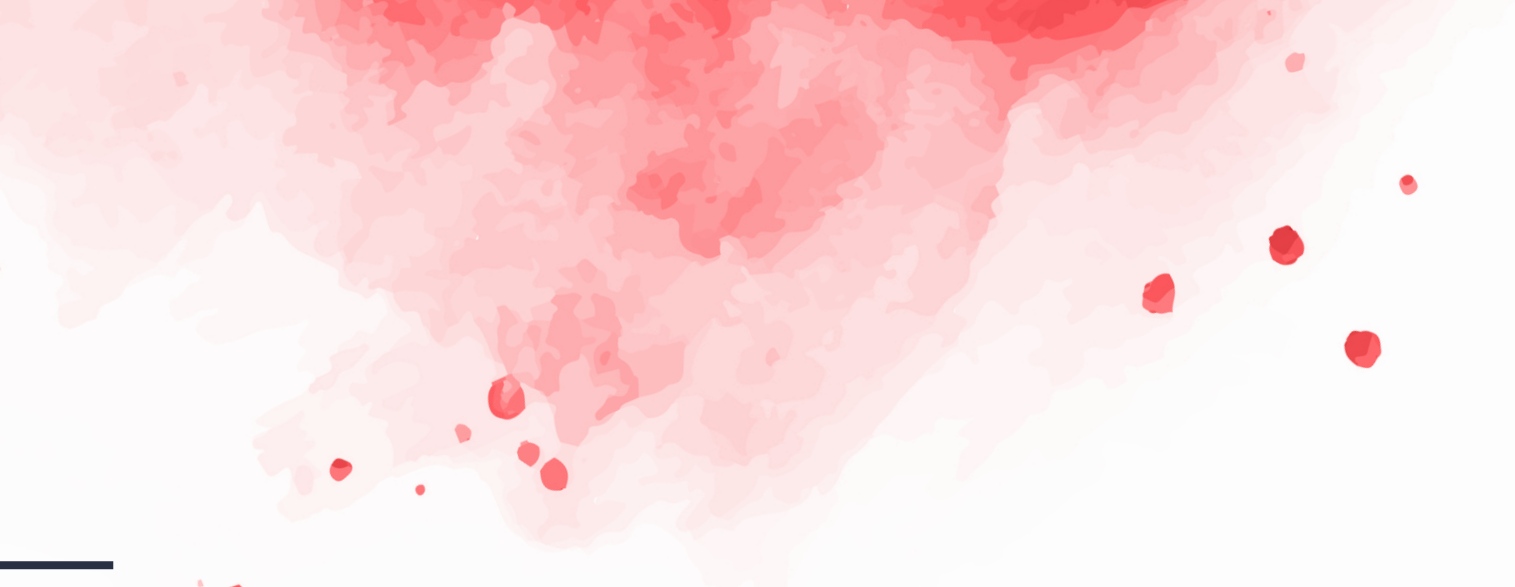


Figure 10: The Aspirational Future of Education – Workshop Results (Author's Own)

05. Defining Pathways to Re-Imagined Schools of the Future



Defining Pathways to Re-Imagined Schools of the Future

Based on the value statements and tensions, we can gain more clarity on what pathways from H1 to H3 could look like. Without being over-prescriptive, figure 11 maps out pathways based on the intersectionality of both systems. Because the focus of this study has to do with system actors and ideologies, I matched actors to specific pathways based on accountability and responsibility to effect such changes (note that the “system” in this figure refers to all actors hierarchically mapped above the teacher, otherwise referred to as “upper system” in this study). Through understanding the innovation pathways, I charted these back onto the Three Horizons map, as seen earlier in table 2 to fill in the innovations at play (H2) during the time of transition. While the proposed pathways are intended to nudge the system and its actors toward an ideal state, systemic roadblocks to effect such change persist:

- Teachers show to be responsible for most pathways, which could be counter-productive considering their overwhelming workload and responsibility to navigate competing priorities within the existing curriculum. To combat this, I suggest that none of the pathways require the sole responsibility or action of teachers.

- A number of these pathways would still require large scale changes in policy and curriculum. Ideally, however, these responsibilities might be distributed amongst committees, superintendents, and principals.
- Despite having several actors responsible for one pathway, I acknowledge that the distribution of that accountability might not be equal. For example, to *foster a culture of co-creation, action-oriented stakeholder collaboration, and strategic foresight at all levels of the system*: this responsibility might be dominantly facilitated by the system and teachers, but the inclusion of parents and students is intended to hold the dominant actors accountable for authentic collaboration.

Finally, some of the most valuable findings from the Three Horizons exercise are the pivotal shifts that must take place during the time of transition. Key words that had come up in this area include: re-thinking, decolonizing, shift, re-evaluate, redefine, and change. This brings us back to an anchor of the manifested education system: ideologies.

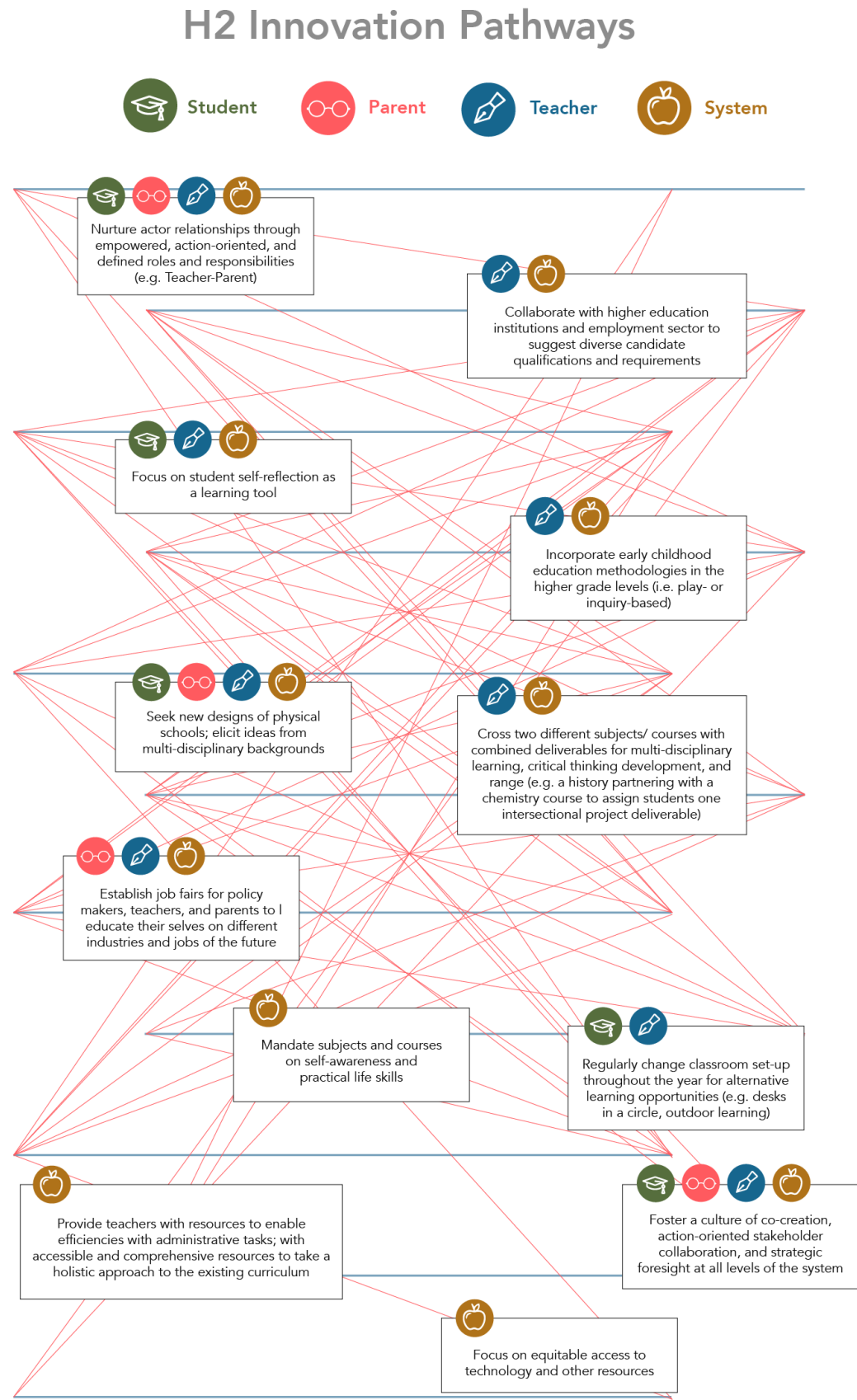


Figure 11: Innovation Pathways (Adapted from International Futures Forum, n.d.)

Re-Visiting the CLA:
Creating a New Ideology

While the CLA is a helpful tool in systems analysis, it can be a powerful tool in foresight to create a preferred future because it "... explores current stories that we tell ourselves and seeks to create new narratives for individuals so that they may represent their desired futures more effectively" (Inayatullah, 2019, p. 3). As such, this can help maintain a balanced approach to co-creating an ideal future because it prompts the consideration of how all system actors might be impacted.

In search of a definition of education that can inform a possibly more ideal myth and metaphor, I've gathered these perspectives on the purpose of education, key features of learning, and on pedagogy. Beginning with a reminder of the Ontario Ministry of Education's definition of education:

"to provide students with the opportunity to realize their potential and develop into highly skilled, knowledgeable, caring citizens who contribute to their society." (Education Act, R.S.O. 1990, c. E.2., 2021).

Now, expanded on that definition, incorporating interview participants' perspectives:

To provide students with the opportunities for self-discovery, to realize their potential at every phase of life, and to develop into diversely skilled adults, caring citizens, critical thinkers, and creative problem-solvers, each uniquely contributing to their society, both today and in the future.

Finally, perspectives from thought leaders:

On learning, according to Sarma and Yoquinto (2020), "...making learning more user-friendly [and more accessible], by identifying and eliminating unnecessary cognitive fetters" (p. xxvii) for the realization of human potential.

On pedagogy, according to Maria Montessori (1964) "The fundamental principle of scientific pedagogy must be, indeed, the liberty of the pupil; - such liberty shall permit a development of individual, spontaneous manifestations of the child's nature" (p. 28).

On multi-disciplinary range in education, according to David Epstein (2019) "... habits of mind that allow them to dance across disciplines" (p. 49). And that "exploration is not just a whimsical luxury of education; it is a central benefit" (p. 130).

The Indian people of Manitoba's position on education, paraphrased by Verna J. Kirkness (2013):

as a preparation for total living...; - as a prime means of improving our economic and social conditions; - as a means of providing the choice of where to live and work...; - as a means of participating fully in our own social, economic, political and educational advancement; - as a comprehensive program to meet the needs of the total community by including people of all ages (p. 69).

On learning and questioning, according to Warren Berger (2014) "...one of their [schools] primary purposes is to enable a twenty-first century citizen to be a lifelong learner, able to adapt to constant change in the modern world... acknowledg[ing] that the ability to question effectively is among the most important of the critical skills needed" (p. 120-121 of 682).

On education, according to Robinson and Aronica (2016), "The most fundamental purpose of education is to help students learn" (p.

71) and "the aims of education are to enable students to understand the world around them and the talents within them so they can become fulfilled individuals and active, and compassionate citizens" (p. xxii).

Without prescribing a perfect definition of education, but with the above perspectives in view, I seek to identify a possible ideal myth and metaphor to act as the starting point of our CLA inquiry; the ideology of a potential aspirational education system (H3):

To learn about self, to learn about the world, and to learn about my contribution to the world.

This proposed myth and metaphor pivots the focus of education back on the act of learning, but without disregarding the economic context in which the education system sits. **"To learn about self"** anchors the ideology in students' self-awareness and self-management, as well as the opportunity to explore and discover their strengths and weaknesses, desired skills and desired learning outcomes; to discover and establish their identity. **"To learn about the world"** continues the progression of student discovery from inward to outward: learning about how the world works along with the practical skills and knowledge required to live in this world. And finally, **"to learn about my contribution to the world,"** which ties the first two parts of the statement together, enabling opportunity for making connections and supporting student agency to determine their definition of success. This should cause a feedback loop to learning about self, and learning about the world, as students, along with other actors, might co-create an education that facilitates their arrival to their success.

In figure 12, instead of an iceberg, the layered analysis is worked into the image of a tree to illustrate shared roots (myths and metaphors), a strong trunk (worldviews), networks of branches (system causes), and lush leaves (litany). This is an image that is life-giving; a more appropriate illustration for this preferred future. Table 3 provides an elaborated view of how the newly defined myth and metaphor can lead to powerful ramifications.

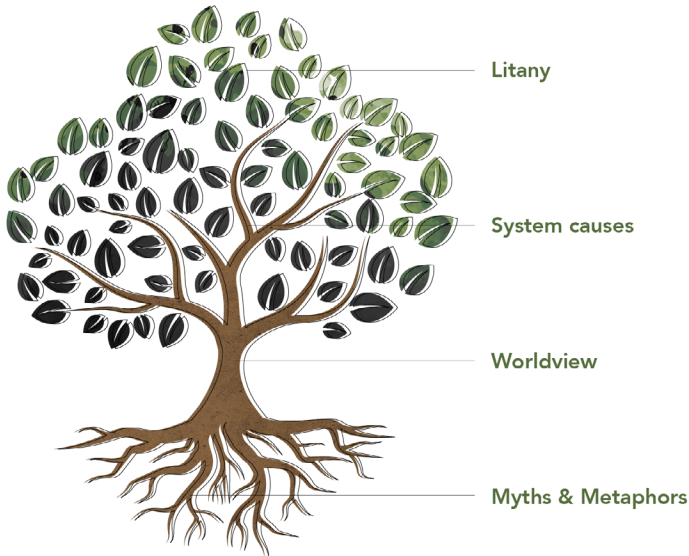


Figure 12: CLA Visualized as a Tree (Based on Inayatullah, 2017)

	Students	Parents	Teachers	Upper Education System*	COVID-19
Litany	Frictionless transition to life beyond school	The school and local community are helping me raise my child	I can facilitate learning	Meeting more stakeholder needs because of the diverse education offerings	Learning continues
	Increased creative capacities	My child is capable and well-equipped for the future	Less time spent on reporting, and more time on observing	Funding re-allocated from ministry operations to schoolboards	Learning accommodations and solutions available to meet diverse needs
	I define what success looks like				
	Healthy minds, bodies, and emotions			Rich and diverse data collected each year	
	Resilient child; student agency				
System Causes	Genuine connection with community and nature				
	Curriculum focuses on a range of skills and knowledge acquired through student-centred learning	Curriculum emphasizes on selfevaluation, selfawareness, and physical health	Open and flexible pedagogy that encourages co creation	Open and flexible pedagogy that encourages co-creation	Open and modular physical schools with untraditional features
		Curriculum focuses on a range of skills and knowledge acquired through student-centred learning	Accessible and interactive resources available to teachers	Decentralizing responsibilities to local schools to better meet local needs	Resilient emergency response protocols in place
Worldview			Curriculum as a guideline		Foresight practice
	Education is about the whole child development	Education facilitates growth and maturity of responsible adults	Society reaps the social and economic benefits from students with diverse skillsets and experiences	An educated population is an indicator of a healthy society and economy	School as a community resource
Myths & Metaphors					Learning looks different at different stages of life
					Children don't only learn in school
	TO LEARN ABOUT SELF, TO LEARN ABOUT THE WORLD, TO LEARN MY CONTRIBUTION TO THE WORLD				

Table 3: CLA Re-framed on Learning

While I acknowledge that this preferred future is a bit rosy, I believe that’s the whole point of creatively imagining schools of the future. Does this new myth and metaphor solve every problem? No. But can it serve as a starting point on the trajectory towards schools that authentically meet children’s needs where they are and for the future? Does it evoke agency at all levels of the system? Could it inspire new conversation, dialogue, and creative solutions to generate new pathways to an aspirational H3? Can this starting point challenge the disconnect between policy and practice?

I believe it can.



Artifacts of the Future

Based on re-imagining schools of the future, and the pathways to get there, this section provides shape and colour to the preferred future. My approach to imagining artifacts of the future revolves around system actor relationships, as has been the focus of the entire study, and is also centred on the proposed new ideology of

education as demonstrated in figure 13. Some of these artifacts could be found during the time of transition, in the aspirational future, or both. The following section expands on what each artifact is, its main purpose, and how it contributes to the pathway from H1 to H3. Additionally, some artifacts are visualized and contextualized.

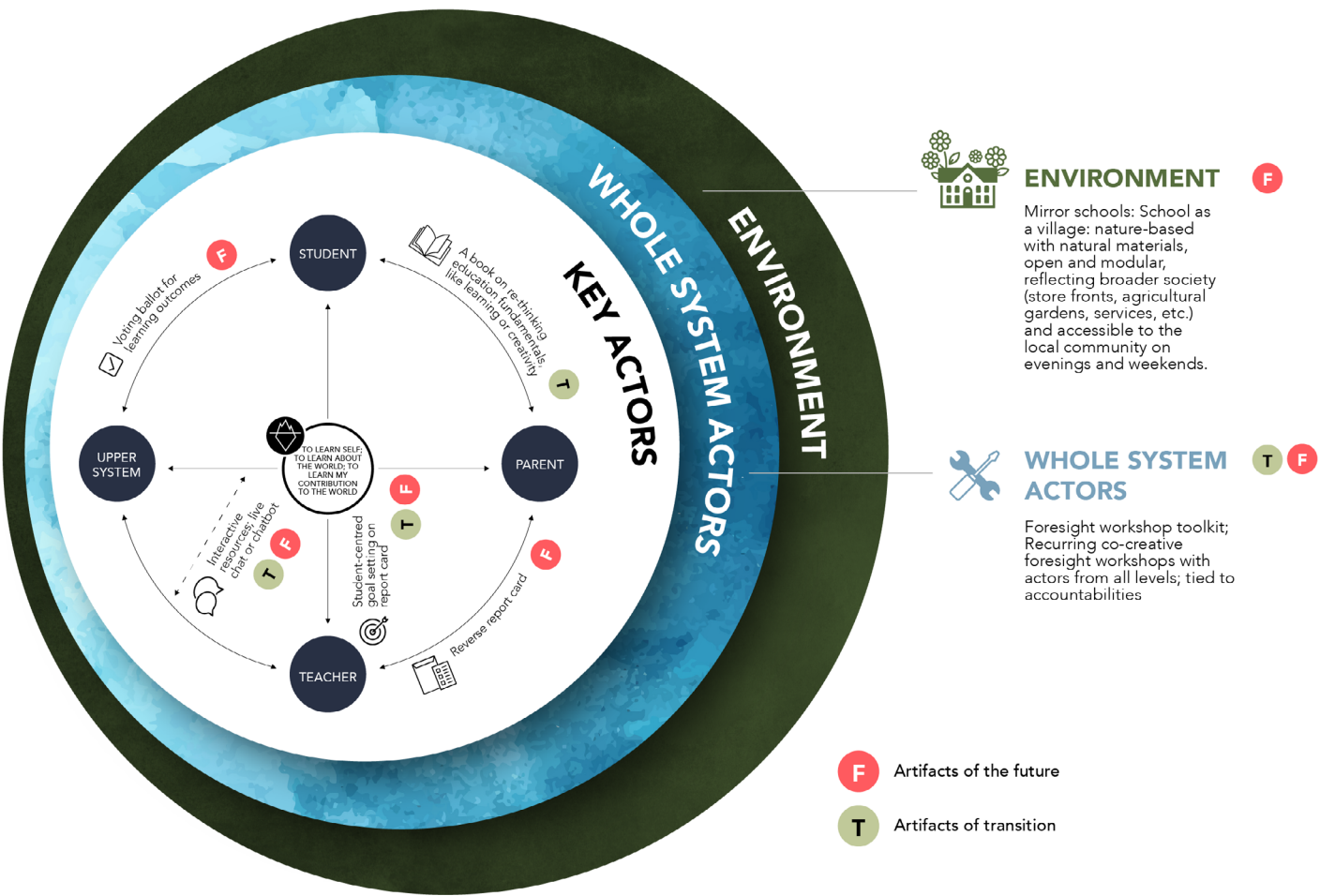


Figure 13: Artifacts of the Future and of Transition (Author’s own)

The Artifacts



Student – Parent (Artifact of Transition):
A book on re-thinking education fundamentals

What A series of books on topics like learning, creativity, or foresight that children and parents can read together.

Purpose To shape ideology on aspects of education, and to bring children and parents to a mutual understanding on the purpose of education.

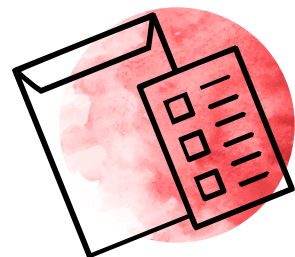
Pathway This develops student agency to continually shape and form their definition of success, as well as empower parents to advocate for their children in the education system.

Book on Re-thinking Education
Fundamentals for Students and Parents

Title: You Are So Creative!
Age Group: Primary/ Junior and their parents

Manuscript:

You are so creative!
Creativity is painting with every colour you can imagine
It’s playing with all sorts of numbers, up to infinity without end!
Creativity is imagining you’re an astronaut in space
It’s finding a solution to any problem you might face.
Creativity is asking every question under the sun
It’s moving to the rhythm of your own beating drum.
Creativity is investigating how birds and bugs fly
It’s experimenting in the kitchen and baking apple pie
Creativity is singing a song to your own special tune
It’s seeing what happens when you garden in June
Creativity is about looking at the world around you.
It’s playing, and thinking, and imagining from your view.
So, get out there to learn, and observe, and investigate
Then play, think, and imagine what next you might create...
Because you are so creative!



Parent – Teacher (Artifact of the Future): Reverse Report Card

What A report card that provides parent assessment based on their observations of their child’s personal and practical life development.

Purpose To provide the teacher with a holistic perspective of the student’s development, as well as to allow for a two-way communication between parents and teachers.

Pathway By providing the teacher with a holistic view of the student, this can inform the teacher’s facilitation and curriculum adaptation to better meet student needs. This can bridge the gap between learning at school and learning at home.

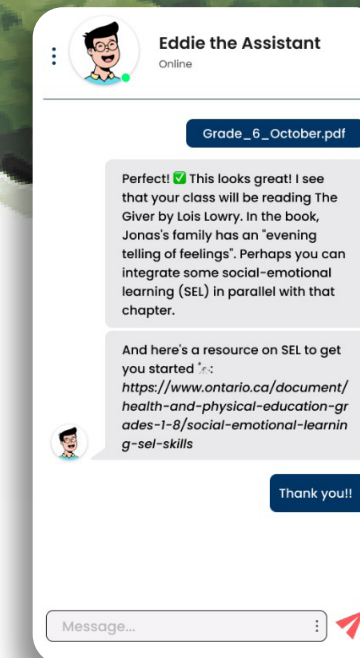
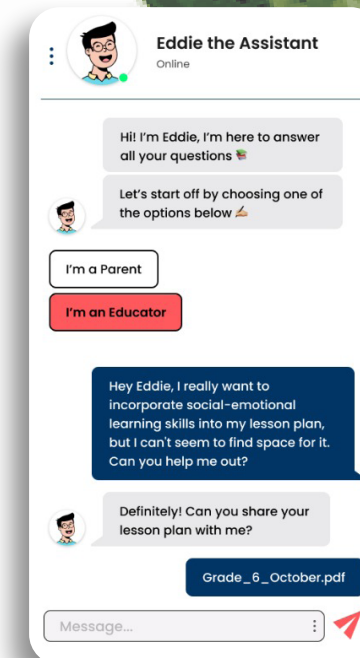
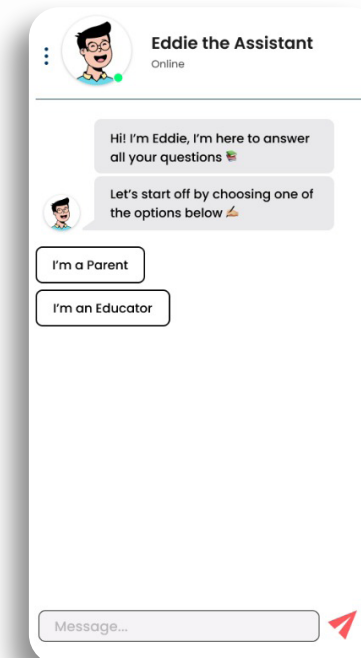


Figure 14: Interactive Chatbot Resource between Teachers & Upper System, designed by Joel Honasan for the project



Teacher – Upper System (Artifact of Transition and the Future): Interactive Chatbot Resource

What An interactive chatbot that is user-friendly and draws from an extensive repository of curriculum resources as seen in figure 15.

Purpose To cut down time spent on administrative tasks such as external searches for lesson plans. To draw on readily available multi-disciplinary resources to support lesson planning, assessment, and delivery.

Pathway To support with creative lesson plans that can incorporate more than one curriculum objectives, which can help alleviate navigating through competing priorities in the curriculum.



Upper System – Student (Artifact of the Future): Voting Ballot on Learning Outcomes

What A survey-format voting opportunity, which would coincide with elections.

Purpose To survey all students, from K-12, with development-appropriate questions on desired learning, and learning outcomes. For students grades two and above, there can include a couple questions reflecting on the past four years of learning. To inform the Ontario Ministry of Education, and the newly elected Minister of Education of student learning priorities for curriculum consideration. To provide student trustees with both qualitative and quantitative data as they represent their fellow students at the board level.

Pathway To increase student agency and recognize their capability and innate desire to learn, which can in turn be nurtured through curriculum policy. To migrate from performative student trustees to accountable and valued trustees.



Student – Teacher (Artifact of Transition and of the Future): Student-centred Goal Setting

What A legitimized section on the report card, including the students' self-determined goals, the measured progress, changes in direction, and self-reflection.

Purpose To encourage self-awareness, self-reflection, and self-assessment that is tied to teacher and parent accountabilities and support.

Pathway To increase student agency and create a genuine environment of co-creation and collaboration in the classroom, and at home.

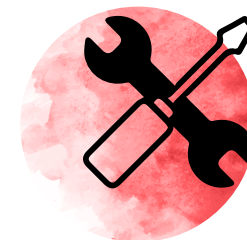


Parent – Upper System (Artifact of Transition and the Future): Interactive Chatbot Resource

What An interactive chatbot that is user-friendly and draws from an extensive repository of simplified curriculum resources.

Purpose To support parents as they support their children's learning. To keep parents informed on learning practices and objectives.

Pathway Bridging the gap between learning at school and learning at home. Providing the education system with live feedback on parent searches, queries, and concerns.



Whole of System (Artifact of Transition and the Future): Foresight Workshops & Toolkit

What A recurring co-creative foresight workshop with actors from all system levels, with upper system commitment accountabilities. Accompanied by a foresight workshop that can be scaled to classrooms, project teams, trustees, teacher groups, etc.

Purpose To maintain a co-creative foresight practice and empower all system actors.

Pathway Supports the development of a flexible and responsive system that is always future-ready. Flattens the hierarchy across power and knowledge, increasing agency at all system levels. An opportunity to keep pedagogy open and to have action-based dialogue.

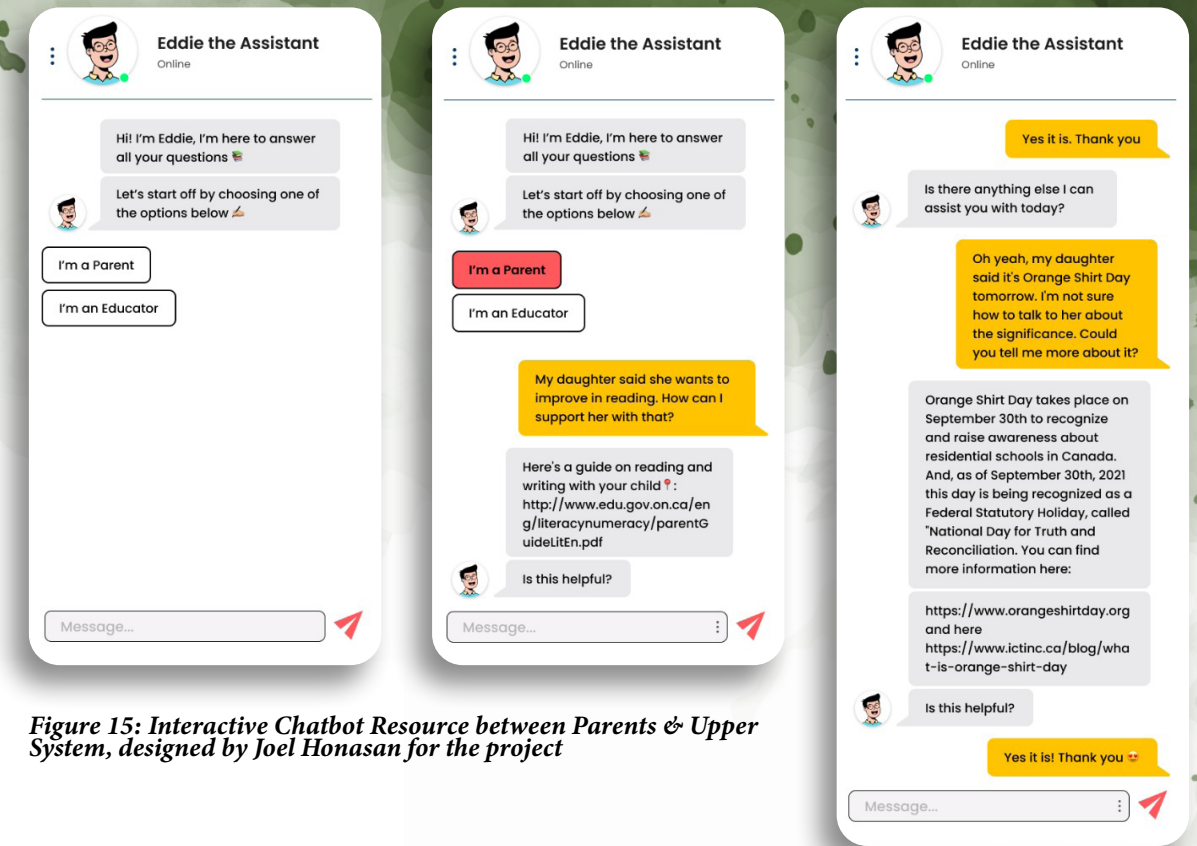


Figure 15: Interactive Chatbot Resource between Parents & Upper System, designed by Joel Honasan for the project



Environment (Artifact of the Future): Mirror Schools

What Open and modular physical school spaces, built with natural materials to *reflect* the environment and to *reflect* society. Can include mini store fronts, agricultural gardens, access to services, a community kitchen, and more. Accessible to the local community on evenings and weekends.

Purpose To accentuate the environment as teacher, providing real-life opportunities to practice student skills and knowledge. To encourage inquiry-based learning and diverse learning methodologies. To open opportunities for continued and shared learning through access on evenings and weekends.

Pathway Enables teachers to take a facilitator role and to strengthen student agency. Removes emphasis from a rigid curriculum towards an open pedagogy and a diverse and adaptable curriculum. Empowers parents to continue to advocate for their children through organic involvement.

Mirror Schools



Illustration 1: Example of a Mirror School, painted by Justin Luz for this project

06. Conclusion

Conclusion

A shift in education ideology has the potential for profound impacts when re-imagining schools of the future. I would even go as far as to argue that true education system transformation is only possible with a paradigmatic shift across system actors. However, changing the way we think about education cannot be the sole intervening approach to bring about meaningful change; it must be matched with adjustments to behaviours, operations, policies, and more. Furthermore, establishing and influencing a shift in ideology is a significant undertaking; one that might take decades, and one that might need to begin with upper system actors so that the students, parents, and teachers can believe in the paradigm shift, through tangibly experiencing systemic change. This illustrates that although this study presents the proposed intervention as a somewhat linear approach to systemic changes, beginning with an ideological shift, the reality is that many pathways toward the aspirational future might precede the lofty change in ideology. As convoluted as this may be, the power of orthodoxies remains a critical lever of change, and the parallel pathways are of matched importance.

An unexpected outcome of this study was the iterative investigation through the lens of system actors throughout the research.

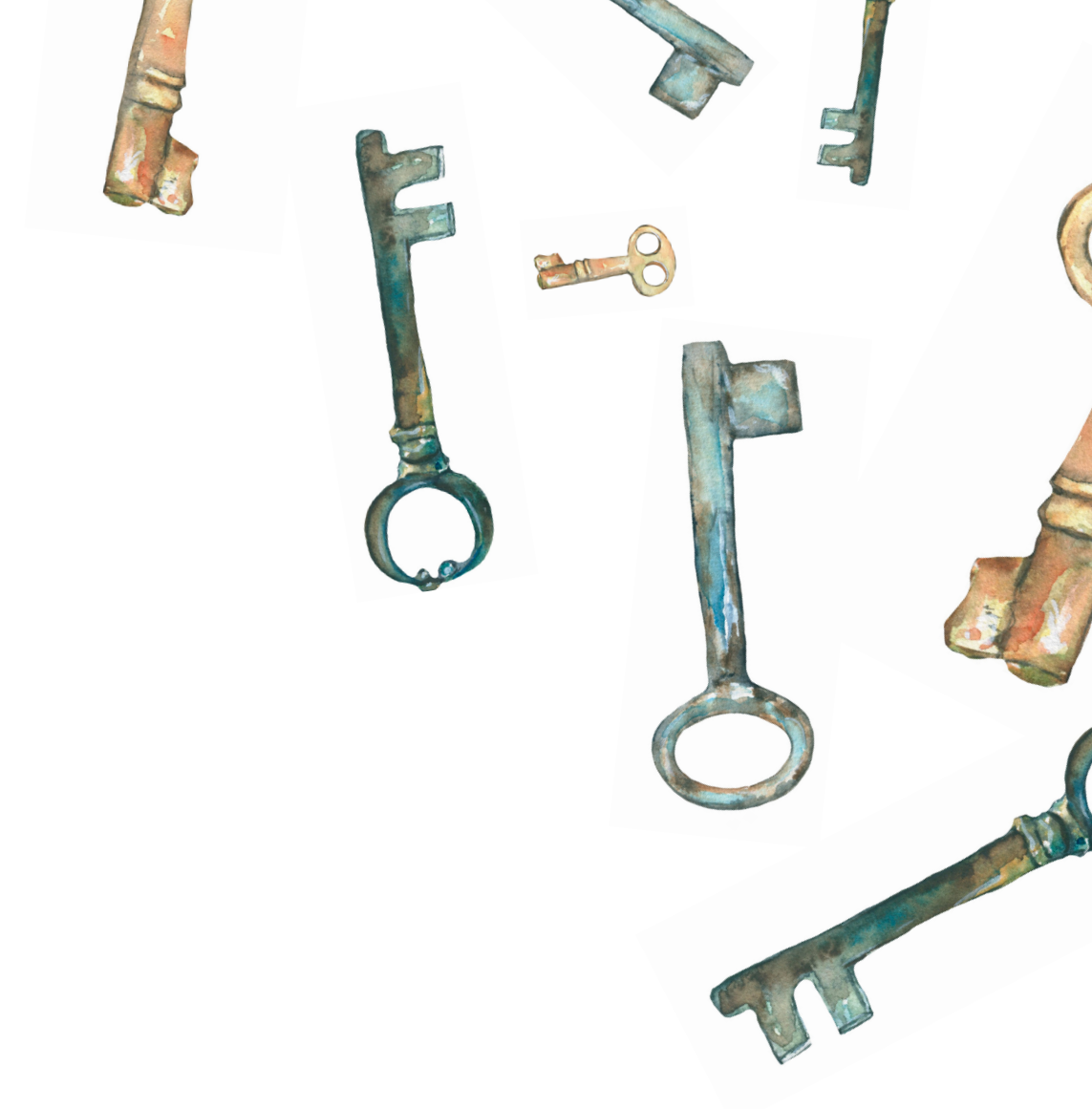
And yet, as much as I attempted to isolate each actor's perspectives, needs, and desires, I found that all system actors are so deeply interconnected and interdependent, regardless of power or agency. Their fundamental ideologies of education has influence on the other and can affect how they relate to one another. This is what makes it critically important that schools of the future are co-imagined and co-created.

Granted a next phase to this study, I recommend scaling interviews and workshops to more participants to either confirm or challenge the findings on system actor behaviours and paradigms. It would also be advantageous to include upper system actors for their perspectives on the gap between policy and practice, if any are perceived. Finally, it would be pertinent to investigate other organizational case studies where a shift in paradigm was effective, and how that shift was influenced, communicated, and established, as well as the actions taken preceding, in parallel, or following the change in orthodoxy. This approach would provide depth and breadth to this study and might lead to tested strategic pathways toward schools of the future.

In the nascence of the present study, however, I hope it has caused you to wonder about your own experiences in education, as well as begin

to wonder what your hope is for the future of education. How have you defined success? How might you redefine what success looks like to you? How has your education, both formal and informal, advanced, or hindered your pathway to success? How might you re-think or supplement your curated learning experiences in order to achieve your desired future? I hope you consider this new orthodoxy and how you might learn about yourself, learn about the world, and learn more about your contribution to this world.

Finally, I leave you with this sentiment by Giuseppe Sergi, as quoted in Maria Montessori's *The Montessori Method* (1964), "'To-day in the social world, ... an imperative need makes itself felt – the reconstruction of educational methods; and he who fights for this cause, fights for human regeneration'" (p. 2). Whether active or peripheral to the education system, we have a role to play in imagining and realizing schools of the future. Changing the way we think about education can be a powerful kernel in the machine that is our society. And so, I suggest this change to the proverbial saying: **learning is the key to success.**



References

References

Benjamin, A.S. & Pashler, H. (2015). The value of standardized testing: A perspective from cognitive psychology. *Policy Insights from the Behavioural and Brain Sciences*, 2(1), 12- 23. DOI: 10.1177/2372732215601116

Berger, W. (2014). *A more beautiful question: The power of inquiry to spark breakthrough ideas* [eBook edition]. Bloomsbury Publishing.

Carey, B. (2014). *How we learn: The surprising truth about when, where, and why it happens*. Random House.

Collective Leadership for Scotland. (2020). Week 1-2: Three horizons. Website. <https://collectiveleadershipscotland.com/week-1-2-three-horizons/>

Education Act, R.S.O. 1990, c. E.2. (2021). <https://www.ontario.ca/laws/statute/90e02/v93>

Epstein, D. (2019). *Range: Why generalists triumph in a specialized world*. MacMillan Publishers.

EQUAO. (2020). About EQAO. Website. <https://www.eqao.com/about-eqao/>

Gharajedaghi, J. (2011). *Systems thinking : Managing chaos and complexity: a platform for designing business architecture*. ProQuest Ebook Central <https://ebookcentral.proquest.com>

Government of Ontario. (2010). *Growing success: Assessment, evaluation, and reporting in Ontario schools*. <http://www.edu.gov.on.ca/eng/policyfunding/growsuccess.pdf>

Government of Ontario. (2020). *Introducing the new curriculum and resources site*. Curriculum and Resources. <https://www.dcp.edu.gov.on.ca/en/>.

Inayatullah, S. (2017). Causal layered analysis: A four-level approach to alternative futures. *Futuribles*. https://www.researchgate.net/publication/332706079_Causal_Layered_Analysis_A_Four-Level_Approach_to_Alternative_Futures_RELEVANCE_AND_USE_IN_FORESIGHT

International Futures Forum. (n.d.) *Three horizons – Value tensions and pathways*. <https://www.iffpraxis.com/3hkit/?dlh=168&rn=AZ3k>

Kirkness, V.J. (2013). *Creating space: My life and work in Indigenous education*. University of Manitoba Press.

Meadows, D.H. (1999). *Leverage points: Places to intervene in a system*. Sustainability Institute. https://donellameadows.org/wp-content/userfiles/Leverage_Points.pdf

Montessori, M. (1964). *The Montessori method*. Schocken Books Inc.

Ontario Public School Boards' Association. (2021). *Transitioning from the COVID-19 school experience: An OPSBA discussion paper*. <https://www.opsba.org/wp-content/uploads/2021/05/Transitioning-from-the-COVID-19-School-Experience-Discussion-Paper.pdf>

Ontario Ministry of Education. (2021). *Who's responsible for your child's education*. Website. <http://www.edu.gov.on.ca/eng/document/brochure/whosresp.html#oct>

People for Education. (n.d.). *Who does what in Ontario's education system*. Website. <https://peopleforeducation.ca/public-education-in-ontario/#whodoeswhat>

Robinson, Sir K. (2006, February). *Do schools kill creativity?* [Video]. TED. https://www.ted.com/talks/sir_ken_robinson_do_schools_kill_creativity

Robinson, Sir K. & Aronica, L. (2016). *Creative schools: The grassroots revolution that's transforming education*. Penguin Books.

Sarma, S. & Yoquinto, L. (2020). *Grasp: The science transforming how we learn*. Penguin Random House.

Sharpe, B., Hodgson, A., Leicester, G., Lyon, A., & Fazey, I. (2016). *Three horizons: A pathways practice for transformation*. *Ecology and Society* 21(2): 47. <http://dx.doi.org/10.5751/ES-08388-210247>

Systemic Design Toolkit. (n.d.). *Methodology*. Website. <https://www.systemicdesigntoolkit.org/methodology>

Westheimer, J. & Kahne, J. (2004). *Educating the "good" citizen: Political choices and pedagogical goals*. *PS: Political Science and Politics*, 37(2), 241-247. <https://www.jstor.org/stable/4488813>



