CALGARY ON THE PRECIPICE

The Path to LearningCITY 2025

May 2020

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A study of this complexity requires an interdisciplinary team of connected and committed scholars. We would like to thank these people for their investment and continued support as we continue the conversation on Calgary becoming a LearningCITY:

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EXECUTIVE SUMMARY

For 40 years, economic, social, and cultural factors such as advanced technology and globalization have changed how cities compete to attract new citizens. A city's proximity to natural resources is no longer the driver of its competitive advantage. Instead, a city's ability to attract, develop and retain talent (the people who will live and work there) is the greatest predictor of social and economic prosperity. That means how cities grow and develop their talent pool is crucial. Today, a person's capacity to adapt in new roles and embrace uncertainty demands new skills. These skills must transcend industries and professions. If there were such a thing as a defining competency, it would be adaptability.

Adaptable people can adjust to the dynamic context of the world today. Adaptability can be reactive, like how many are learning to live in a new reality during the COVID-19 pandemic. However, adaptability can also be proactive and intentional, characterized by anticipating change and planning our response in advance. In this study, we explore the attributes of adaptive people and how they underpin adaptive organizations, systems, and cities.

> **"Imagine a city of people who view disruption as opportunity. Imagine a population whose talent and skills continuously evolve."**

Imagine a city of people who view disruption as opportunity. Imagine a population whose talent and skills continuously evolve. Imagine a Calgary that attracts investment and talent from across the globe because it's known as a city that learns its way forward. We don't believe the question is if this city is the Calgary of the future. Rather, our focus is on how we will realize our potential and whether the speed of change will be fast enough to navigate the precipice on which we are standing today.

At the root of adaptation is learning. So to become a city that adapts, Calgary must become a city that can learn faster and better than others. How do we transform Calgary into a "LearningCITY"? We have to start by changing the learning system.

We argue that how we choose to learn will define Calgary's future social and economic prosperity. Yet the ability for today's learning system to transform to meet emerging demands remains widely debated, because education is one of the most change-resistant institutions in society. Education is also threaded through society, not just in kindergarten to grade 12 and accredited educational institutes, but it's also in employers, professional associations, business ecosystems and in the hands of individual learners. The ways people learn, in short, are incredibly complex. That means there's enormous potential to effect wider change by evolving our learning system.

How can Calgary's learning system be optimized to drive social and economic prosperity in the face of accelerating uncertainty? To answer this question we conducted a multi-disciplinary study into the nature of adaptability and the learning system. As a result, we propose the establishment of a LearningCITY Task Force guided by the following five pillars:

1. **Transition to an open learning system:** To become a LearningCITY, Calgary must transition from the traditional closed learning system,

which is defined by isolated learning experiences like the path from kindergarten to post-secondary to professional development, to an open, lifelong personalized learning system where people are empowered by and accountable for their own continuous development.

2. **Transition to purpose-based learning:** A LearningCITY needs a learning system that prioritizes empowerment and autonomy for the learner. The learner's development pathway, their route through the learning system, becomes a personalized climbing wall instead of a predictable ladder. At its core, this open learning system aims to develop adaptable people, so the system itself must be adaptable.

> *"At its core, this open learning system aims to develop adaptable people, so the system itself must be adaptable."*

3. **Commit to universal experiential learning:** An empowered learner learns through a variety of mediums and experiences. Today, many of these learning experiences aren't hands-on. Therefore, as part of an open learning system, we recommend that Calgary becomes the first city in North America to adopt a universal experiential learning system incorporating a minimum of 450 experiential learning hours for undergraduates prior to graduation.

4. **Develop enabling competencies:** An individual who has a strong foundation of enabling competencies (skills that are useful no matter the context, like

communication or citizenship) will be more adaptive than someone whose learning is anchored in domain-specific competencies (skills that serve them in a particular role or context, like welding or cooking). We propose Calgary adopt a *unified community competency model* that aims to develop skillsets that contribute to a person's ability to adapt. This approach will transcend industries, roles, and professions, creating a unique competitive advantage for our city.

5. **Invest in city-level structural capital:** An efficient, city-wide open learning system requires high-level coordination between many stakeholders. For this to happen, all partners in the learning system will need to ensure processes to advance collaboration and shared learning.
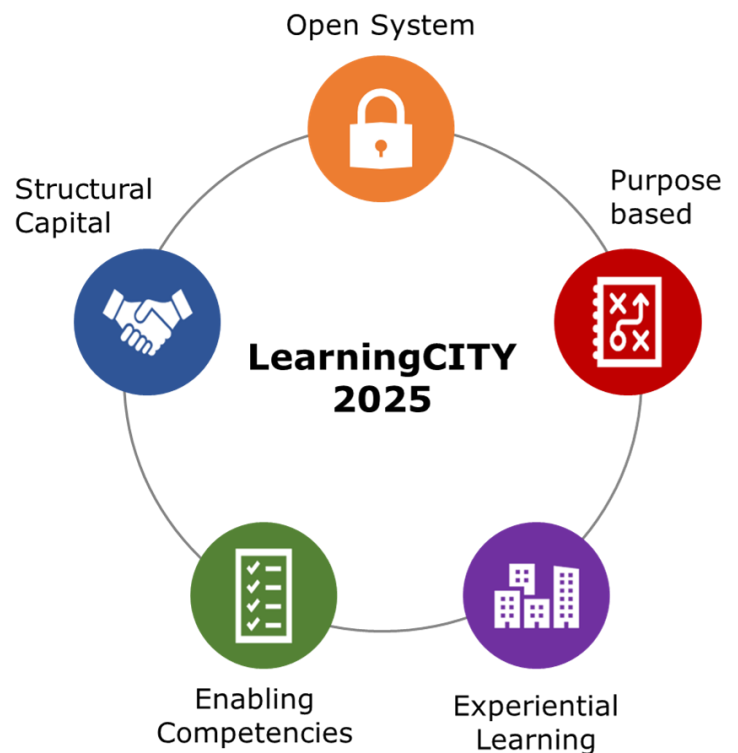
INTRODUCTION

SETTING THE STAGE

Necessity is the mother of taking chances.

— Mark Twain

In June 2018, Calgary city council unanimously approved a new economic strategy for the city. Facilitated by Calgary Economic Development, *Calgary in the New Economy* called for a strategic diversification of the economy. This call for the city to diversify and adapt isn't new. Diversification has been debated for almost a half-century, with little evidence that the debates have swayed hearts or minds. [1] In its past attempts at diversity, the Government of Alberta took equity positions in financial institutions, meat packers and technology companies. Calgary was briefly a global leader in wireless technology in the 1980s. Questions about why we should adapt or what we should become have been debated endlessly. However, the more fundamental question remains — how does Calgary adapt?

"Questions about why we should adapt or what we should become have been debated endlessly. However, the more fundamental question remains — how does Calgary adapt?"

Calgary in the New Economy confronts the how question head on and finds a clear answer: Calgary only adapts when its population adapts. A central pillar of the economic development strategy in the report focuses on education, and more specifically on the evolution of the learning system required to prepare Calgarians for the new dynamic economy. This new economy requires Calgarians (the city's "talent") to adapt quickly to emerging opportunities and challenges. In a constantly evolving labour market, learning must be continuous, because the skills organizations need from their talent are not fixed. To further develop the concept of a new learning system, a broad range of community partners, led by Calgary

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[1] Morgan, G. (2019, May 3). After 50 years of trying to diversify its economy, Alberta is still stuck on oil. Financial Post.

Economic Development, established the **LearningCITY Project** in late 2019 with a mandate to explore how a city-wide learning system could be re-envisioned to deliver on the priorities defined in Calgary's economic strategy. This discussion paper is the first output of the LearningCITY Project.

Then COVID-19 changed everything.

Its effects reinforced the critical need to grow a more adaptable population. The economic and social impact of the pandemic in Calgary is amplified by the simultaneous collapse of global oil prices. Mary Moran and Sandip Lalli, the presidents of Calgary Economic Development and the Calgary Chamber of Commerce respectively, argue that going back to the way things were pre-pandemic is no longer an option. Writing in the *Globe & Mail*, they state: "long-term recovery and a future with opportunities for our children will depend on the creativity, grit and determination of entrepreneurial Calgarians and the innovative thinkers in our economy."[2]

The pandemic has magnified some fundamental weaknesses in our current learning system. For example, there's huge dependence on traditional in-classroom learning models. A massive digital divide has been highlighted by exploding demand for student and educator access to computers and reliable high-speed internet. Institutions are re-creating curriculums instead of sharing them, and educators are struggling from inexperience with the complexity of online learning. And that's just the tip of the iceberg. Moran and Lalli contend that there's only one path forward — and it is together. As they state, the city's new reality "…will require a new level of alignment, leadership, and trust from all orders of government, businesses, educators and social-welfare organizations to resolve the simultaneous challenges. It is the way we will forge our path forward."[3]

> *"Calgary's economy requires talent to adapt quickly to emerging opportunities and challenges. In a constantly evolving labour market, learning must be continuous."*

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[2] Moran, M. & Lalli, S. (2020, April 18). Calgary will not go back to the 'way things were'. The Globe and Mail.

[3] Moran & Lalli (2020).

Reinventing Calgary must begin by reinventing how we learn. Only when every Calgarian can not only continuously learn and adapt within but also embrace our new reality will our city and every citizen step back from the precipice and chart a new path to the future.

A CITY ON THE PRECIPICE

"The ability to learn faster than your competitors may be the only sustainable competitive advantage"

– Peter Senge (1990)

For most of human history, the success of a city depended on its proximity to scarce natural resources and the distribution of those resources. Yet in the past four decades a city's competitive position has increasingly been defined by its ability to attract and employ high-valued talent. Today, continuous economic, social, and technological disruptions are redefining the nature of high-value talent globally, with "adaptivity" as an essential quality. In a 2018 report, the World Economic Forum forecast that by 2022, 75 million jobs will be displaced across the leading 20 economies, while 133 million new jobs will be created in emerging sectors, requiring half of employees globally to be retrained or have new training by 2022.

Even before the pandemic and the collapse of oil prices, Calgary was suffering serious impacts from the aforementioned disruptions. For example, Calgary Economic Development forecasts that up to half of the jobs performed by Calgarians today could be at risk of automation over the next 20 years. As early evidence of this need for diversification, the Information and Communications Technology Council

forecasts that with the expansion of fields such as artificial intelligence and data science, total employment in key digital roles will surpass 77,000 in Alberta by 2023, doubling the employment growth rate of all other sectors.[4] Yet Calgary's deep roots in the oil and gas sector means that only about 25 per cent of Calgary's technical expertise is made up of software engineers and data scientists, compared with 50 to 62 per cent in Ottawa, Vancouver, Montreal and Toronto.[5] All of this reinforces our belief that Calgary's successful navigation of the precipice will require transforming how we learn as a city.

"Cities today are not only experiencing a war to attract talent, but also a race to develop that talent. This race requires new ways of thinking and learning."

Cities today are not only experiencing a war to attract talent, but also a race to develop that talent. This race requires new ways of thinking and learning. It's a race Calgary is losing right now. While education remains one of the most change-resistant parts of society, learning is an essential catalyst for our city's transformation. In response, our team explored rich, multidisciplinary literature and conducted two studies to examine how Calgary's learning system could be optimized to drive

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[4] Calgary Economic Development (2019). *Calgary in the New Economy*.

[5] Pike, H. (2019, March 01). Calgary must 'fix the talent pipeline' to attract high-tech business, says economic development boss.

social and economic prosperity in the face of accelerating uncertainty.

LEARNING OUR WAY FORWARD

Imagine a Calgary where citizens view disruption as an opportunity, giving us a natural capacity to adapt and reinvent ourselves. Imagine a Calgary where organizations are designed not only to be resilient, but also to embrace change as an opportunity to diversify and grow. Imagine a Calgary where we continuously train and reorganize our talent and their competencies to stay ahead. Imagine a Calgary that attracts investment and talent from across the globe because we're recognized as a city with an uncanny ability to anticipate emerging disruption and systematically adapt to take advantage of it. We don't believe the question is if this is Calgary of the future. It is. The questions that remain are how will we become that city, and can we evolve fast enough to avoid the precipice.

Being adaptable is about having the intrinsic capacity to adjust to new conditions or purposes. Adaptability can be reactive; many of us today are responding to the conditions triggered by the COVID-19 pandemic. However, adaptability can also be proactive and intentional, rooted in a person's ability to anticipate change and adjust their response in advance.

"Adaptability can also be proactive and intentional, rooted in a person's ability to anticipate change and adjust their response in advance."

Learning cities are filled with adaptive people who thrive in adaptive organizations. And these organizations
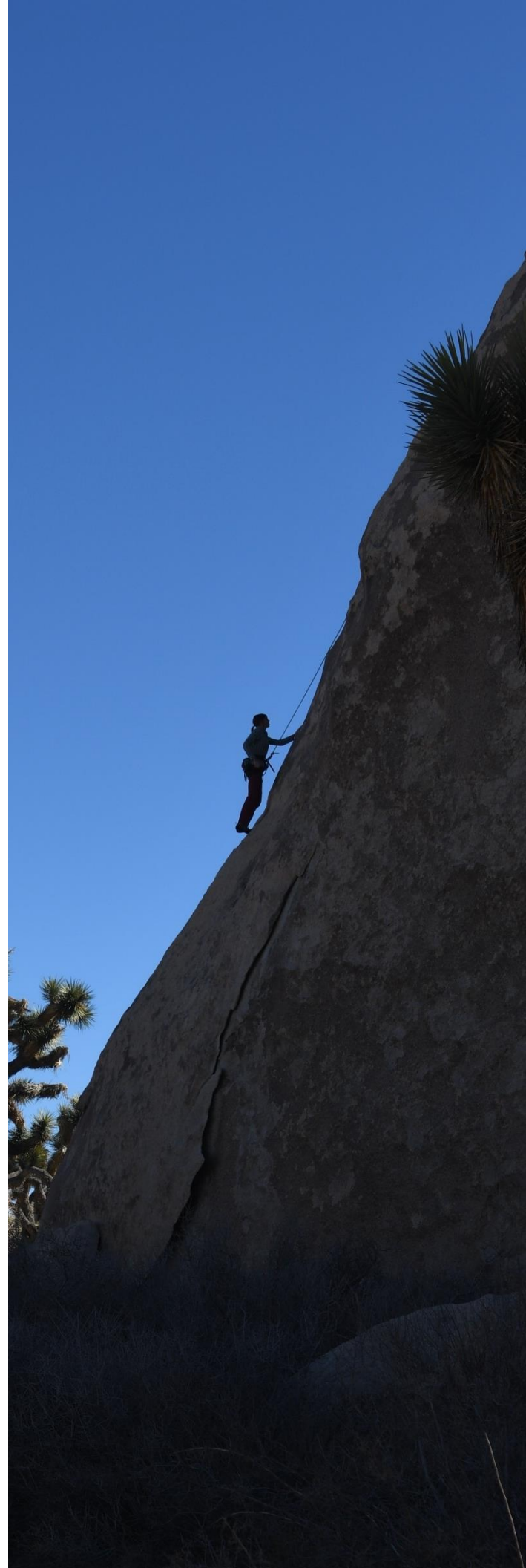
collaborate to form broader systems: adaptive and evolving ecosystems. So how do we transform Calgary into a LearningCITY?

For many people, adapting is difficult. While part of adaptability is rooted in personality, many of the barriers we face are developed over a lifetime. They can be traced back to a learning system with deep roots in the industrial era. People have long sought standardized certifications from traditional educational institutions and organizations have long hired those graduates. The pace and degree of change in our world today requires new skills, mindsets, and collaborations. For this reason, the future of our city will be defined less by our natural resources and more by how we choose to continuously adapt and learn.

Today, Canada and Alberta produce some of the strongest academic outcomes measured by the Organisation for Economic Co-operation and Development. Calgary is therefore in a position of strength, but this strength could become our liability. Traditionally, both the learning system and employers put significant weight on what are called *domain-specific competencies*. Domain-specific competencies are the skills you need to complete a specific job, whether it be welding, policy analysis or engineering. *Enabling competencies*, on the other hand, are foundational. Also known as soft or transferable skills, they enable an individual to succeed across a diverse range of personal and professional contexts. These include competencies such as problem-solving, interpersonal communications and organizational skills.

For centuries, domain-specific competencies were highly valued by society as they were essential to generating short-term economic value. However, given the pace of change today, the lifespan of many domain-specific competencies is shortening dramatically.

Just think, in the past a trade learned as a teenager could be developed and refined through a lifetime of experience. Today, domain-specific competencies often become dated and demand continual training to maintain relevancy. This means that lifelong learning looks more like a climbing wall than a ladder. The traditional ladder model was designed to certify every learner and deliver them to a defined destination as efficiently as possible. It's the foundation of our current learning system. In contrast, the climbing wall model, regardless of a learner's age, prioritizes personal exploration, experimentation, enabling competencies and adaptivity. It includes diverse educational pathways, including all forms of learning (formal and informal) and experiences (professional, volunteer, and contextual). So, you could say that the future of a resilient and adaptive Calgary is about how we step off the ladder and choose to design and navigate our own climbing wall.
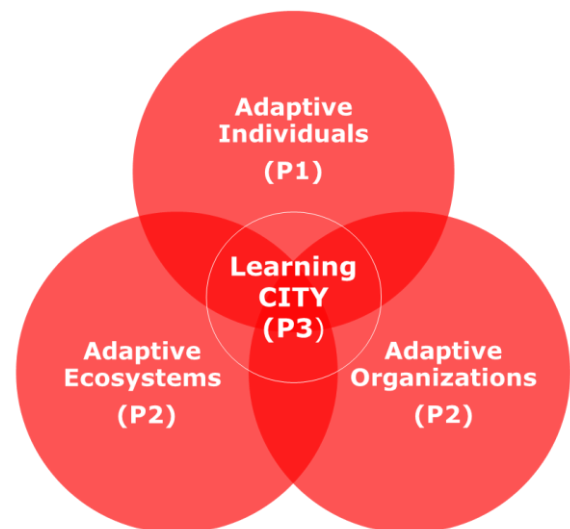
Figure-1: LearningCITY
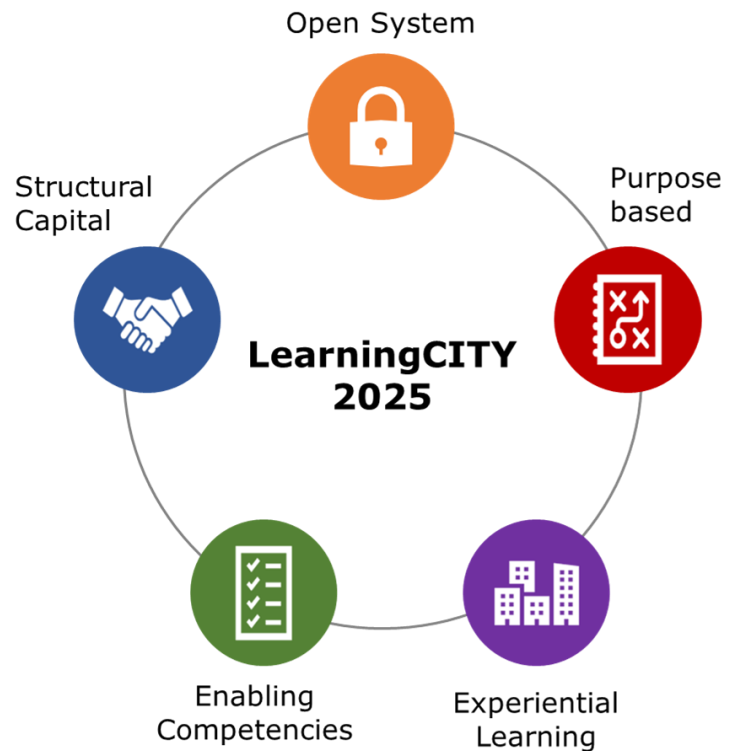
TRANSFORMING INTO A LEARNINGCITY

To explore the challenges in creating a LearningCITY, we conducted two qualitative studies. The first incorporated a learning system stakeholder workshop with 110 participants, including employers, educators, administrators, and policymakers. The second phase of this study built on the findings from a literature review and the workshop to develop and explore the role of enabling competencies in existing professional and industry competency frameworks. (Refer to the first report, ***Calgary on the Precipice: Learning our way Forward***)

From this process, we defined a series of five pillars to start the process of transforming our learning system (Figure-2). As part of the process, we must acknowledge that the scope of learning today extends far beyond accredited educational institutions, into other non-profit and for-profit educational providers, employers, policymakers, accreditation and professional associations, other community and business ecosystems and individual learners. This recognition redefines the nature and process of learning and introduces enormous complexity — and potential — into our learning system.

Figure-2: LearningCITY 2025

1. TRANSITION TO AN OPEN LEARNING SYSTEM

To expand a city's ability to adapt, the city must leverage its existing vast (but fragmented) closed learning system and the talent it produces. In Calgary, the current learning system includes 402 accredited schools (kindergarten to post-secondary) with a total of 294,000 registered learners, and over 1,600 other educational service providers (e.g., professional development, training). There are more than 154,661 organizations of all sizes that benefit from the talent developed by this learning system.

To become a LearningCITY, Calgary must transition from its traditional closed system (defined by isolated learning experiences from kindergarten to post-secondary education to professional development) to an open, lifelong personalized learning system where the individual sits at the centre and becomes both empowered by and accountable for their own development. Building on the principles of open innovation, an open learning system transforms from a "producer-consumer" learning model where educators produce human capital and employers consume it, to an open co-creation model. In an open learning system, learning organizations expand to incorporate the full system,

including for-profit and non-profit organizations. Together they are partners in co-creating an interconnected system of accelerated, agile and dynamic learning experiences for all 1.4 million Calgarians. [6]

An open learning system requires commitment from all organizations, from school boards to universities to start-ups to large organizations (Figure-3). Each partner adopts the role of a co-creator in developing adaptive talent for not only the immediate benefit of their own organizations, but also for developing the broader adaptive capacity of the city.

Transitioning from the traditional closed learning system, which has evolved over the past century and delivered world-leading learning outcomes, to an open learning system anchored in adaptive capacity will be difficult. Yet there is

significant short-term urgency facing our city, and widespread awareness of the crises driven by both the COVID-19 pandemic and the collapse in oil prices creates an opportunity for positive change.

Significant resources are already focused on short-term training. Though domain-specific competencies are essential for generating short-term economic value, they do little to start the long process of developing a city's adaptive capacity, as the value of and demand for these domain-specific competencies fluctuate with labour market dynamics. That means critical training initiatives by groups such as Calgary Economic Development and the Information and Communications
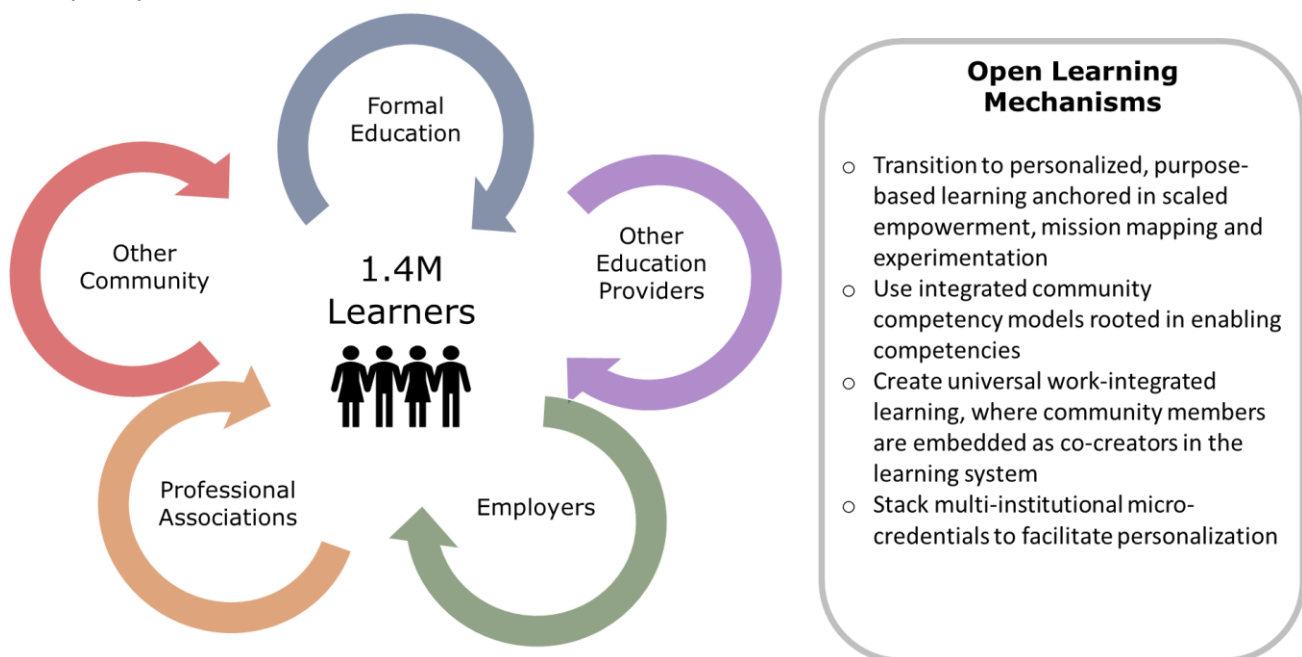
Figure-3: The Calgary open learning system

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Case Study:
Flexible on- and off-ramps

People are different and so are the on- and off-ramps to learning. Calgary Catholic Family Services introduced the Never Too Late program as an on-ramp to help adults complete their high school equivalency. The program provides learners three to four hours of instruction twice a week. The results of this program reflect the critical importance of an open learning system with flexible on- and off-ramps.

o   89% of students indicated that they had increased income or job opportunities, or went on to pursue further education

o   38% increased their income, with an average increase of approximately $13,000 per year

o   92% of students reported that they felt more positive about themselves

o   77% of parents enrolled in the program reported a positive impact on their children

Technology Council must also include the development of enabling competencies. This approach will prepare the city and its citizens, organizations, and systems for the inevitable: ongoing uncertainty in all industries.

At the same time, domain-specific competencies will always have their place in the economy and therefore in learning. Programs that focus on developing enabling competencies, such as liberal arts, have the opportunity to expand their teaching to include relevant domain-specific competencies. Notably, the domain-specific competencies are layered over top of a strong foundation of enabling competencies. The teaching of domain-specific competencies, such as business skills or computer science, could happen through pathways that already exist for students, such as general education, open

studies, minors, or double majors. Or, they might happen through new approaches such as micro-credentialing. Many of these short-term recommendations are not difficult to enact, but they do demand common political will at all levels (e.g., educator, administrator, and policy).

Royal University could simultaneously pursue a minor in design at the Alberta University of the Arts. In the current closed system, if Mount Royal University wanted a design minor available to its students, it would require years of course design and approval and faculty hires just to duplicate a program that already exists across town.

**Case Study:
Learning that Spans Boundaries**

The Music Recording Arts program is a five-year compressed, collaborative program offered by Western University and Fanshawe College in Ontario. Students in their second year of the Bachelor of Musical Arts program are eligible to apply for the Music Recording Arts program. Successful graduates of the program receive a Bachelor of Musical Arts degree from Western University and a two-year Ontario College Diploma in Music Industry Arts from Fanshawe College. These graduates have blended theory and practice to accelerate their professional competencies and value to prospective employers.

**Case Study:
Partnered micro-credentials**

Bow Valley College is reimagining adult learning with Pivot-Ed. Pivot-Ed gives learners a portfolio of competencies to help them pivot in their careers and meet Canada's future workforce needs. With Pivot-Ed, Bow Valley College can assess skills regardless of how they were acquired and then recognize them with a micro-credential.

For example, Bow Valley College is the first Canadian hub for the IBM Skills Academy. This program is a new certification program to prepare students for careers in the IT industry and build local capability consistent with international standards. IBM trains Bow Valley College faculty to train students across several career tracks such as business intelligence, cyber security, and cloud computing.

A dynamic open learning system will require active involvement from key members of the learning system, namely learners, educators, and employers. This collaboration is essential to ensure that all competencies being taught in the system reflect emerging priorities in the market and in society. For example, in an open system, a marketing student at Mount

To speed up the deployment timeline, we propose establishing processes that facilitates collaboration and coordination across the open learning system. This

governance structure will oversee the development and implementation of an open learning system. This plan will define learning system's priorities and be updated annually to ensure it reflects the dynamic challenges facing the city. Importantly, it would be accountable for securing incremental funding to act on the noted priorities.

2. TRANSITION TO PURPOSE-BASED LEARNING

The most significant challenge in starting an open learning system is the role of the individual learner. The learner can no longer be a passive passenger in a linear system anchored in efficiency and a static career or disciplinary pathway. Rather, a LearningCITY needs an open learning system that cares deeply about increasing the empowerment and autonomy of the learner. Such a system recognizes that learning is a result of experience and reflection in a variety of educational contexts. The learner's development pathway becomes a personalized climbing wall instead of a one-size-fits-all ladder. The learner is challenged to embrace uncertainty and change as avenues for applying their enabling competencies. Teaching learners to be adaptive means that the open learning system itself requires an adaptive mindset.

To accelerate this shift, we believe Calgary-based post-secondary institutions could become world leaders in transitioning from a traditional disciplinary orientation to a purpose-based learning orientation. Such a shift would see students in charge of developing comprehensive personal "missions" (i.e., learning plans that lead to an intended career outcome), which they will test and refine over time. This mission will empower learners and allow them to measure how their custom climbing wall is

serving them as the world changes around them. A mission enables learners to identify and prioritize the skills required for success. A key component is the development of a learner's "mission map." The mission map can be organized around four components: (a) education and learning resources, (b) employment experience, (c) community/volunteer experience, and (d) contextual experience. We also recommend this mission map include the anticipated relationships they will need to achieve their mission (e.g., professional, and personal mentors).

Important considerations in developing Calgary's purpose-based learning system include the consideration of student resource challenges (e.g., the digital divide) and cultural challenges (e.g., their comfort with uncertainty, level of focus on achievement and attitudes toward hierarchy). Further, the integration of K-12 institutions into the climbing wall model will be an important future step in developing an open learning system and adaptive learners for Calgary.

**Case Study:
Purpose Based Learning**

Elon University in North Carolina recognizes that if you don't have a destination, any path will get you there. It offers a mentored individualized professional development experience. This mentorship process guides a student through the development of a comprehensive professional and academic plan. This staged program includes self-exploration (e.g., values, interests), career exploration, professional communication, and conduct, developing emotional intelligence, intercultural competence, and other professional skills. This process is non-credit; however, students are provided 40 hours of credit towards the professional work-experience requirements of their program.

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3. UNIVERSAL EXPERIENTIAL LEARNING

Despite appeals to expand community-based experiential learning in post-secondary or secondary education, there's a significant divide between aspiration and reality. Today it's estimated that about 50 per cent of undergraduate learners in Canada are exposed to some form of experiential learning (i.e., learning by doing). The intensity of this exposure varies by the mode of experiential learning. In Calgary, all post-secondary institutions incorporate forms of experiential learning, but it largely remains program-specific rather than a school-wide requirement. For example, both the University of Calgary and Mount Royal University have established goals to have every undergraduate student exposed to an experiential learning activity prior to graduation. The spectrum of these experiences ranges widely. Students in a co-operative education program may be required to complete three 450-hour work terms prior to graduation. In contrast, a site visit or guest speaker in a single class is also reported as an experiential learning activity. Research tells us that the depth and intensity of an experiential learning experience is essential to deeper learning.[7] Therefore, we recommend that Calgary becomes the first city in North America to adopt a universal experiential learning system incorporating a minimum of 450 experiential learning hours prior to graduation.

Embracing universal experiential learning without adding significant administrative

Table-1: A model of universal experiential learning

Program-directed experiential learning	Faculty-directed experiential learning	Student-directed experiential learning
o Co-operative education o Professional practicum o Clinical placements o Internships o Apprenticeship o Field placement	o Course-based case study with a limited level of client engagement o Observational field trips coordinated by faculty o Course-based community-service learning o Course-based live case study with a high level of client engagement o Course-based community-engaged research projects (e.g., honours thesis, directed reading) o Field schools	o Co-curricular professional portfolio o Research assistant for community-engaged research project o Volunteer experiences with embedded reflection o Entrepreneurship

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[7] For additional reading on experiential and work-integrated learning refer to Dorland, A., Finch, D. J., Levallet, N., Raby, S., Ross, S., & Swiston, A. (2020). An entrepreneurial view of universal work-integrated learning. *Education+ Training*.

work requires the entire learning system to innovate and develop new forms of more efficient experiential learning delivery by working together. We recommend a shift from program-directed experiential learning to a triangular experience incorporating program-, student- and faculty-directed experiential learning (Refer to Table-1). Faculty-directed experiential learning is an experience delivered as a course-based requirement. Student-directed experiential learning is when a student completes self-directed work in the community that directly supports the learning outcomes of their program but is independent of their program. Though it's independent, this type of experiential learning includes supervised critical reflection to enrich the learning experience but isn't necessarily assessed for credit. As institutions transition to a shared, open, and experiential learning model across all disciplines, its essential that instructor oversight and standards are maintained. Experiential learning experiences should be designed to give the learner increasing independence and challenge as they build their skills.

> **"We recommend that Calgary becomes the first city in North America to adopt a universal experiential learning system incorporating a minimum of 450 experiential learning hours prior to graduation."**

4. DEVELOP ENABLING COMPETENCIES

To achieve the goals of this expanded open learning system, we propose Calgary adopt a *unified community competency model* (referred to from here on as "competency model") to develop adaptability at the individual, organization, and ecosystem levels. Competency models have proven to be effective for aligning and prioritizing the required competencies across individuals and institutions. A competency model could become the common anchor for all levels, from individuals (e.g., employees, educators, managers) to organizations to systems (e.g., Kindergarten-post-secondary). The proposed competency model should be based on the two broader skill categories we've already discussed:
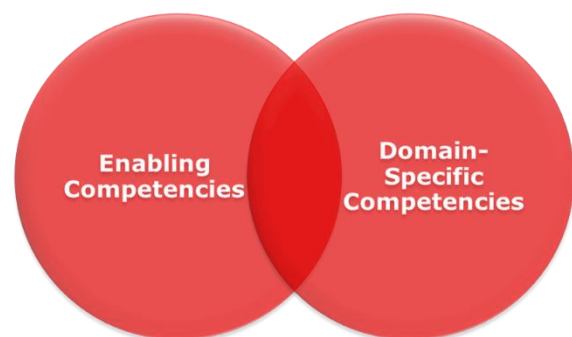
Figure-4: Dual competencies

enabling competencies and those domain-specific competencies that are sufficiently agile to transcend disciplines, industries, and roles (Figure-4).

The debate between enabling competencies and domain-specific competencies has existed since the advent of modern education. However, this debate often descends into an argument between applied "work-ready" vocational training and a liberal arts or general science education. It's an argument without a winner. Adaptive capacity isn't an either/or debate; it's a result of the intentional intersection of enabling competencies and domain-specific competencies. This requires great effort from individuals and organizations to communicate the value of liberal arts or general science education to the vision of the LearningCITY. Crossing boundaries will help academics come down from their "ivory towers" while also inviting practitioners to meet them at the foot of those towers to discuss the value of foundational learning. A city-wide framework can define the enabling competencies needed in academic programs to ensure relevance and sustainability. Engaging with potential "early adopters" amongst stakeholders will be essential to be able to demonstrate the processes and outcomes of the competency model and learning system initiatives.

Analytical Competencies

Analytical Thinking
Contextual Agility
Creativity
Curiosity
Perseverance
Problem Solving
Reflection
System Thinking
Taking Initiative
Time Management

Interpersonal Competencies

Collaboration
Conflict Resolution
Effective Listening
Emotional Intelligence
Influence
Integrity
Relationship Curation

Foundational Literacies

Civic Literacy
Financial Literacy
Numeracy
Technology Literacy
Verbal Communication
Written Communication

Professional Competencies

Define Workplace Goals
Resource Management
Inspire & Lead Others
Professional Identity

Figure-5: Four cluster model of enabling competencies

5. INVEST IN CITY-LEVEL STRUCTURAL CAPITAL

High-level collaboration is key to the success of the Calgary learning system. Everything that happens within the system must be aligned. This requires that processes exist for increased coordination and alignment across the current fragmented learning system. With that in mind, we propose the following three priorities:

Measure the development of enabling competencies: This includes refining and activating the *unified community competency model*. Interestingly, many of the enabling competencies noted in Figure-5 are described as core learning outcomes from kindergarten onward in global

education standards. Yet our current system lacks clear accountability for teaching and evaluating enabling competencies. For domain-specific competencies, on the other hand, such accountability exists in post-secondary faculties or professional and trade associations (e.g., for engineers and electricians). In fact, the current domain-centric post-secondary education system reinforces the superiority of domain-specific competencies over enabling competencies. Programs including accounting, law, computer science, economics, welding, chemistry, the culinary arts, and countless others are taught by domain-specific experts.

While each program will undoubtedly incorporate learning outcomes associated with enabling competencies, such as critical thinking or interpersonal skills, in a domain-centric system, enabling competencies are at best secondary outcomes. Few systems define measurements or assign accountability to ensure their development. For example, accreditation in domains from accounting to welding requires rigorous testing to verify that a person has the required domain-specific skills in the given field. Yet these same systems either assume that program completion means the student has

developed core enabling competencies or they never care about their existence. This oversight reinforces the dominance of domain-specific competencies and a static mindset in a time where, in fact, adaptive capacity is essential. Importantly, a competency model that emphasizes enabling competencies doesn't dilute the critical role of domain-specific competencies. Rather, it amplifies their value by giving individuals, organizations, and systems the agility to anticipate and adapt to accelerating uncertainty.

Facilitate learning experiments and research: To continue to evolve the learning system, researchers must prioritize, coordinate, and facilitate small learning experiments, or pilot projects, with radical intent. The design and execution of these experiments will be open and shared by the entire open learning system. The goal is to expand learning system capacity by leveraging this form of open and shared knowledge. All of this can be achieved at a system-wide level. This discussion paper, for example, is the result of such collaboration by a team of interdisciplinary researchers from a variety of institutions and a diverse review team.

Develop open learning tools: Following the aforementioned experiments and research, there must be processes to develop shared tools and supports for the full system to use. For example, these could include shared mission mapping supports or local business case studies. These tools and supports will be developed and made available under a Creative Commons license.

We recognize that there are early adopters who will embrace this change and participate in early collaborative projects within a competency model framework. We also recognize that there are more-

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**Case Study:
Collaborative open access tools**

Mount Royal University's Institute for Innovation and Entrepreneurship, in conjunction with MRU Career Services, developed a free open-access *Designing YOU* series, including 12 eBooks written by 20 co-authors to support young adults in planning their personal and professional development. The book series is supported by a searchable database of 150 career mission maps and 14 podcasts. The series is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International license (CC BY-NC-SA 4.0) and can be customized and white-labeled by any institution or educator. The *Designing YOU* series also includes a series of teaching supports and student exercises.

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traditional institutions that will proceed cautiously and require time to develop consensus among their stakeholders. These different paths to learning system innovation can coexist as change begins and accepting this is key to achieving our LearningCITY goals.

A PATH FORWARD. TOGETHER.

Today, Calgary's already-fragile economic and social fabric is threatened by both the pandemic and oil prices declining to the lowest level in a generation. These crises provide both a challenge and an opportunity to leverage our learning system as the essential driver of our city's transformation. These major threats and the dramatic changes that Calgarians are experiencing in their personal and professional lives have paved the way toward a different way of thinking about old problems.

The goal of this discussion paper is to start a debate about the future of Calgary and the role of learning and talent development as part of this re-envisioning and rebuilding. Decades of multidisciplinary research show us that embracing uncertainty is difficult for most people, organizations, and systems. The common response is a combination of denial and resistance. For this reason, we focus on the underlying multidisciplinary science to guide us on the many challenges of developing a LearningCITY. In doing so, we

conclude that addressing this challenge must start with developing an open learning system committed to accelerating and nurturing the adaptive capacity within each of us. To be a city that adapts, Calgary's citizens must possess the capacity to learn.

The challenge is this is not simply about adjusting the learning outcomes for learners in kindergarten, university, or college. It's about re-envisioning the nature of learning and the learner by recognizing that traditional education systems, though critical, are only a small component of our city's rich, but fragmented learning system.

> *"It's about re-envisioning the nature of learning and the learner by recognizing that traditional education systems, though critical, are only a small component of our city's rich, but fragmented learning system."*

A central component of this proposal is the adoption of the open innovation learning model. This model, adopted by companies ranging from Google to LEGO, recognizes that when you empower people, you accelerate innovation. Learners and employers are no longer customers. They are, and need to be, co-creators in the learning process at all levels of education. However, with this empowerment comes significant responsibility to invest in this new model. For learners, it means we must take increasing ownership of our learning, regardless of whether we are 16 or 60. Harvard is developing the Sixty Year

Curriculum initiative to develop "new educational models that enable each person to retrain as their occupational and personal context shifts.[8] For employers, it means investing in learning far earlier and on a sustained basis. This investment may be collaboration with experiential learning in high schools, universities or colleges, or investment in training existing employees. For policymakers and educators, it requires the support for the timely development and approval of programs that provide the foundation of a re-envisioned open learning system designed to train adaptable citizens. Collaboration, though, can be difficult, especially across such diverse partners as policymakers, educators, and employers. Therefore, the greatest challenge for most of us is not external, but the embedded rules, routines, practices, and cultures that influence our individual mindsets, behaviours, and organizations. Yet we believe that the collaboration, compromise, and consensus required to implement an agile and open learning system anchored in adaptive capacity is an essential step forward.

The challenge to move forward on any of these proposals lies in the reality that education is a provincial mandate and is highly politicized. It's also a highly change-resistant sector. Therefore, we propose that Calgary city council establish an independent **LearningCITY Task Force**. This task force would follow the lessons learned from the Calgary Bid Exploration Committee, which was established to study the potential of hosting the 2026 Olympic and Paralympic Games and could work alongside other task forces including the COVID-19 Economic Resilience Task Force. The LearningCITY Task Force would be given 12 months to engage the broader

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[8] Dede, C. (2018, October 19). *The 60 Year Curriculum: Developing New Educational Models to Serve the Agile Labor Market*.

learning community and explore the following areas: [9]

1. Identify emerging competency demands required to deliver on the *Calgary in the New Economy* economic strategy.

2. Benchmark global "best in class" open learning systems.

3. Audit the existing Calgary learning system, including:

    a. programming gaps and opportunities

    b. system-level interoperability

    c. system-level governance

    d. sustainability of current funding

4. Define a LearningCITY 2025 vision.

5. Identify early adopter organizations and individuals in the city to rapidly begin open learning system experiments and share outcomes across the ecosystem.
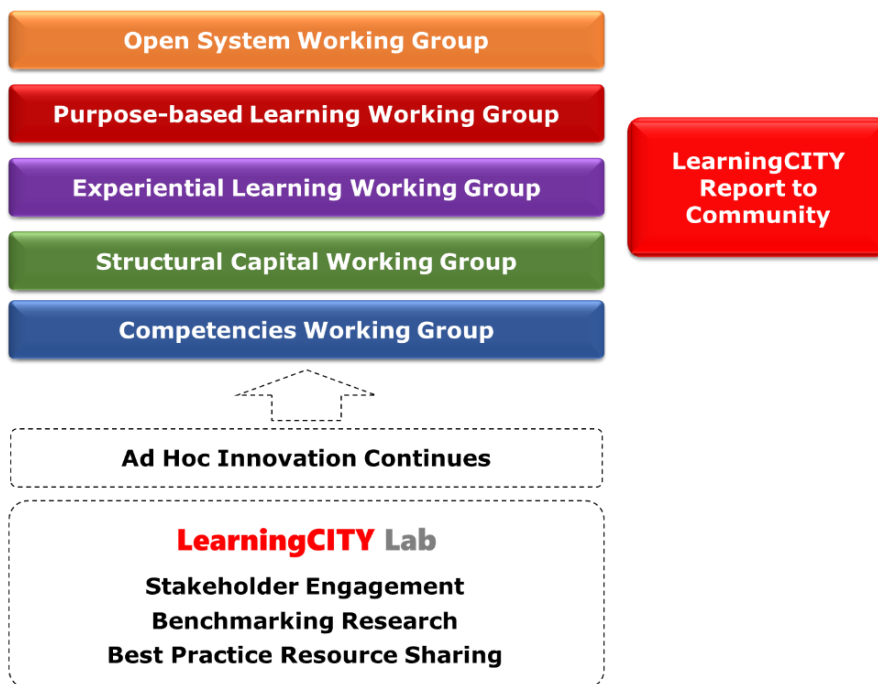

Figure-6: A Proposed LearningCITY Task Force

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[9] For an analysis of the CBEC process, please see Finch, D. J., Legg, D., O'Reilly, N., Wright, S., & Norton, B. (2020). A social capital view of an Olympic and Paralympic Games bid exploration process. *European Sport Management Quarterly*, 1-20.

6. Identify opportunities for increasing system-wide collaboration and accelerating partnerships and programming between employers and educational institutions.

7. Recommend a comprehensive path forward, including policy, funding, measurements, and governance to deliver on the LearningCITY 2025 vision.

8. We propose that the task force be structured with five working groups to explore the five pillars in Figure 2. These groups would receive the support of extensive stakeholder engagement and benchmarking research through the **LearningCITY Lab**, an open collective of researchers committed to evidence-based innovation in learning. The task force would submit a report to the community within 12 months. It's important to note that the task force should not become a barrier to concurrent innovation within the system.

Open System Working Group

Purpose-based Learning Working Group

Experiential Learning Working Group

Structural Capital Working Group

Competencies Working Group

LearningCITY Report to Community

Ad Hoc Innovation Continues

LearningCITY Lab

Stakeholder Engagement
Benchmarking Research
Best Practice Resource Sharing

Figure-7: 12-month LearningCITY program