

# Learning Ecosystems

An Emerging Praxis  
For The Future  
Of Education



GLOBAL  
EDUCATION  
FUTURES



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## **Learning Ecosystems: An Emerging Praxis For The Future Of Education**

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# Abstract

The increasingly complex and interdependent environmental, social, economic, and cultural challenges facing humanity within our biosphere indicate a clear need for societal transformation toward viable and life affirming futures. Learning ecosystems have the potential to unite diverse stakeholders in collective learning for mutually beneficial outcomes that lead toward desired futures for humanity and all life on Earth. Throughout this report diverse case studies reflect emerging approaches to the co-development of learning ecosystems from around the world inspired and influenced by the fields of biology, ecology, social movements, technology, cosmology, design, innovation, systems leadership and more. This research also builds upon the 2018 Global Education Futures report “Educational Ecosystems for Societal Transformation”. The insights reflected in this report explore (1) the skills, knowledge, and ways of being that support life-long and self-directed learning, (2) approaches to ecosystemic learning, and (3) how educational systems can support collective flourishing, shifting our global society toward long-term resilience and thriving. Learning ecosystems are emerging as an interdisciplinary response to the increasing complexity of the 21st century at a time when humanity is changing the very trajectory of evolution on Earth, and needing to reckon with our choices to date as a species. Learning ecosystems offer a potential praxis for the future of education that can profoundly shift the way we learn and shape our future together for collective liberation.

## Note To Readers: 2020: Breakdowns & Breakthroughs

We hope this note finds you, your family, and your communities as healthy and strong as can be in a time of crisis and massive change around the world. The research and writing of this report was completed in January 2020. However, we are now at a bifurcation point where the character of global civilization is in flux. We are in a time of awakening to the depth and breadth of the complex, systemic, and interconnected challenges facing humanity, such as truly reckoning and addressing structural violence and racism, a global pandemic, our climate crisis, mass extinction and biodiversity loss, and global political, social, and economic injustice. As adrienne maree brown suggests “Things are not getting worse, they are getting uncovered. We must hold each other tight and continue to pull back the veil.”<sup>1</sup>

For thousands of years our human legacy has been shaped by the colonization of peoples and places causing historical, intergenerational, and current day harm toward fellow humans and the ecologies we call home. Colonialism continues, generation upon generation, inflicting harm to this day. Our modern human systems have been built upon the legacy of our shared past. In 2020, people are globally waking up to and revolting against the systemic violence, inequity, and injustice that our systems too often produce. At the same time our political, military, economic, health, and educational systems are largely stuck in patterns that reinforce the very suffering many around the world seek to heal. It is time to radically re-imagine how we co-create

systems that reflect our most cherished values in action and to reorient in regards to who the “We” is that is together shaping just futures. In the words of Martin Luther King Jr. “Injustice anywhere is a threat to justice everywhere. We are caught in an inescapable network of mutuality, tied in a single garment of destiny. Whatever affects one directly, affects all indirectly.”<sup>2</sup> Our intrinsic mutuality requires that our visions of the future and the systems that enact our aspirations reflect all those who are part of life’s evolutionary unfolding; in this case all peoples and all life in the biosphere.

Furthermore, in 2020, a global pandemic has illuminated, for many, how deeply interrelated our human systems and Earth systems truly are. COVID-19 reached all continents but Antarctica, sufficiently contagious and deadly to be recognized as the worst pandemic in 100 years. While the pandemic was not a surprise to epidemiologists, futurists, and wisdom keepers who have been aware of this kind of threat for years<sup>3</sup>, as a society, in the face of such rapid change, we are being forced to question the status quo of our current societal structures and the trajectory of our future on Earth. Furthermore, as it relates to education, due to the pandemic in early 2020, within a month and a half, the world stopped going to schools and universities. By mid-April, over 1.7 billion learners were staying at home; this equals 90% of all enrolled learners in the world<sup>4</sup>. The majority of learners and families struggled toward various forms of online learning. This shift rocked educational systems and

<sup>1</sup> <http://adriennemareebrown.net/2017/02/03/living-through-the-unveiling/>

<sup>2</sup> <https://mlkglobal.org/vision/>

<sup>3</sup> E.g. Millennium Project work: [http://107.22.164.43/millennium/Global\\_Challenges/chall-08.html](http://107.22.164.43/millennium/Global_Challenges/chall-08.html)

<sup>4</sup> Derived from <https://en.unesco.org/covid19/educationresponse> (accessed April 14, 2020)

many of the underlying structural challenges within human systems were magnified during the crisis. Although it is too early to anticipate the shape that the education sector will take in the future, some indicators of change are already visible: A) online & EdTech are here to stay<sup>5</sup>, B) new curriculum for changing realities is required<sup>6</sup>, C) we need human-centred approaches to developing learning pathways<sup>7</sup>, D) multi-stakeholder partnerships are on the rise<sup>8</sup>, and E) we need justice-led practices informing the evolution of educational systems<sup>9</sup>.

Around the world there are learners, families, communities, and multi-stakeholder collaborators who are creating alternative approaches (what in this research we call learning ecosystems) for how we learn together now and in the future. In a time of crisis we hope that the pioneers of the perspectives and practices featured in this report support all people and our Earth in healing and moving toward thriving together. As researchers and practitioners it has been an honor to learn from and with the 40 contributing members of this research project, additional editors, and additional advisors who participated in this project during 2019. At the same time, given the systemic and complex challenges that are becoming even more clear in 2020, as researchers we are reflecting upon the design, process, and outcomes of this research project and are challenging ourselves and each other to interrogate our privilege, responsibilities, and accountabilities we and our fellow contributors hold when imagining, inviting, collab-

orating, and enacting educational systems change. What might this research project have uncovered had social justice or anti-racist approaches to research design been embedded as guiding frameworks throughout? How might the content and synthesis of this research have evolved had a broader scope and timeframe prioritized a wider community and diversity of contributors and authors? As you explore the following, note that this report is a “snapshot” of an nascent practice emerging in education, and that there are many people around the world whose work and research, whether included in this report or beyond its scope, who are at the vanguard of the future of education. This report is but one expression of this larger unfolding and it is the hope of those who contributed to and shaped this project that what follows adds to the exploration and evolution of what education can be in the 21st century. This work offers a provocation toward meaningful discourse that challenges and advances future research toward more holistic approaches for learning and leadership. In a time of breakdowns and potential breakthroughs in how we learn together we invite you to engage in this ongoing inquiry with us, to share your perspectives, insights, questions, and challenges, and together evolve how we research, practice, and co-create an emerging praxis for the future of education.

**Jessica Spencer-Keyse,**

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August 2020

<sup>5</sup> <https://www.weforum.org/agenda/2020/03/4-ways-covid-19-education-future-generations/>

<sup>6</sup> <https://www.project-syndicate.org/commentary/covid19-great-economic-mismatch-by-dennis-j-snowier-2020-04>

<sup>7</sup> <https://www.kqed.org/mindshift/55679/four-core-priorities-for-trauma-informed-distance-learning>

<sup>8</sup> <https://www.4sd.info/covid-19-narratives/14-march-2020-covid-19-narrative-four/>

<sup>9</sup> [https://books.google.ca/books/about/Pedagogy\\_of\\_the\\_Oppressed.html?id=oQKMBAAQBAJ&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.ca/books/about/Pedagogy_of_the_Oppressed.html?id=oQKMBAAQBAJ&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

Foreword

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# Foreword: January 2020



By **Andreas Schleicher**,

Director for Education and Skills, and Special Advisor on Education Policy to the Secretary-General at the Organisation for Economic Co-operation and Development (OECD)

How can we build a culture that facilitates learning, unlearning and re-learning throughout life?

Tomorrow's learning systems will need to help learners to think for themselves and join others, with empathy, in work and citizenship. They need to help learners develop a strong sense of right and wrong, a sensitivity to the claims that others make on us, and a grasp of the limits on individual and collective action. At work, at home and in the community, people will need a deep understanding of how others live, in different cultures and traditions, and how others think, whether as scientists or artists. And whatever tasks machines may be taking over from humans at work, the demands on our knowledge and skills to contribute meaningfully to social and civic life will keep rising.

The growing complexity of modern living, for individuals, communities and societies, suggests that the solutions to our problems will also be complex: in a structurally imbalanced world, the imperative of reconciling diverse perspectives and interests, in local settings with often global implications, will require people to become adept in handling tensions, dilemmas and trade-offs. Striking a balance between competing demands — equity and freedom, autonomy and community, innovation and continuity, efficiency and democratic process — will rarely lead to an either/or choice or even a single solution. Individuals will need to think in a more integrated way that recognises interconnections. Empathy, adaptability and trust are underpinning this.

Creativity in problem solving requires the capacity to consider the future consequences of one's actions, evaluate risk and reward, and assume accountability for the products of one's work. This suggests a sense of responsibility, and of moral and intellectual maturity, with which we can reflect upon and evaluate our actions in the light of experiences and personal and societal goals.

The conventional approach in education is often to break problems down into manageable bits and pieces and then to teach learners how to solve these bits and pieces. But modern societies create value by synthesising different fields of knowledge, making connections between ideas that previously seemed unrelated. That requires being familiar with and receptive to knowledge in other fields. In today's education systems, students typically learn individually and at the end of the school year, we certify their individual achievements. But the more interdependent the world becomes, the more we need great collaborators and orchestrators. Innovation is rarely the product of individuals working in isolation, but rather an outcome of how we mobilise, share and integrate knowledge. The well-being of societies depends increasingly on people's capacity to take collective action.

Learning systems therefore need to become better at helping students learn to develop an awareness of the pluralism of modern life. That means teaching and rewarding collaboration as well as individual academic achievement, enabling students both to think for themselves, and to act for and with others. The challenge is that developing these cognitive, social and emotional capabilities requires a very different approach to learning and teaching and a different calibre of teachers. The challenge is to make teaching a profession of advanced knowledge workers who work with a high level of professional autonomy and within a collaborative culture. But such people will not work as exchangeable widgets in education systems that rely mainly on administrative forms of accountability, and bureaucratic command-and-control systems to direct their work. Modern learning systems need to transform: the past was about received wisdom; the future is about user-generated wisdom. Instruction in the past was subject-based; instruction in the future needs to be more project-based, building experiences that help students think across the boundaries of subject-matter disciplines. The past was hierarchical; the future is collaborative, recognising both teachers and students as co-creators.

In the past, different students were taught in similar ways. Now learning systems need to embrace diversity with differentiated approaches to learning. The goals of the past were standardisation and compliance, with students educated in age cohorts, following the same standard curriculum, all assessed at the same time. The future is about building instruction from students' passions and capacities, helping students personalize their learning and assessments in ways that foster engagement and talent. It's about encouraging students to be ingenious.

Learning systems need to better recognise that individuals learn differently, and in different ways at different stages of their lives. They need to create new ways of providing education that take learning to the learner and that are most conducive to students' progress.

Learning is not a place, but an activity. Future learning systems need to use the potential of technologies to liberate learning from past conventions and connect learners in new and powerful ways, with sources of knowledge, with innovative applications and with one another. The past was divided — with teachers and content divided by subjects and students separated by expectations of their future career prospects; with schools designed to keep students inside, and the rest of the world outside; with a lack of engagement with families and a reluctance to partner with other schools. The future needs to be integrated — with an emphasis on the inter-relation of subjects and the integration of students. It also needs to be connected, so that learning is closely related to real-world contexts and contemporary issues, and open to the rich resources in communities. Effective learning environments are constantly creating synergies and finding new ways to enhance professional, social and cultural capital with others. They do that with families and communities, with higher education, with businesses, and especially with other learning environments.

Now, these things are easy to say, hard to do. This is where the publication of this report makes such a difference. It not only develops a coherent framework for future-oriented learning ecosystems that can enable and facilitate a lifelong and lifewide learning culture — it also illustrates how designers, connectors, storytellers and sensemakers can implement this framework successfully. ■

# Preface: Learning Together

Humanity in the 21st century is facing incredibly complex challenges, and at the same time, we have incredible opportunities to consciously evolve how we imagine and co-create our shared future. Humanity now has the power to effect change on a global scale and we are now faced with the responsibility of determining the evolutionary trajectory of both our species and life on Earth as we know it. We are in a time of increasingly complex societal change, ecological crisis, socio-economic flux, and exponential technological and digital transformation. (Explored further in section 1.1) In our ever more interconnected world, it is becoming increasingly more clear that many of the choices humanity is making as a species is jeopardizing life as we know it and reinforcing many systems of oppression and structural violence on people and Earth systems. The immense pressures we are facing and the strain and harm we are placing upon one another and the biosphere is forcing us to evolve and care for the relational and living systems upon which our lives depend. Humanity is at a choice point when we either “devolve” and regress or take action in just, healing, and life affirming ways today, for our future, and the future of generations to come.

In educational systems today, as Tom Hierck succinctly phrases, “we have 21st century students being instructed by 20th century adults using 19th century pedagogy and tools on an 18th century school calendar.”<sup>10</sup> Our conventional educational systems are largely designed to transfer beliefs, behaviors, and

structures that do not serve 21st century life and tend toward measuring success and rewarding privilege and power that reinforces the status quo. In the words of bell hooks “If we examine critically the traditional role of the university in the pursuit of truth and the sharing of knowledge and information, it is painfully clear that biases that uphold and maintain white supremacy, imperialism, sexism, and racism have distorted education so that it is no longer about the practice of freedom.”<sup>11</sup> However, many educators, teachers, communities and collaboratives around the world know education to be a powerful leverage point for humanity to learn how to together address the great inequities and violence that our colonial, industrial, and assembly line inspired systems too often perpetuate. Whilst many pedagogists have provided us with insights to understanding how and why we learn, on a global scale we may only be beginning to understand the implications of human learning on global society at-large and our biosphere. Our relatively simplified or seemingly straightforward processes for measuring learning outcomes in the form of quantitative test scores does not make room for the array of learning styles, needs, and evolving capacities of learners in the 21st century and beyond. When faced with incredibly complex challenges as we are today and will likely be increasingly in the future, building the capacities of our “human skills” such as foresight, creativity, empathy, adaptability, and integrity could not be more important to prioritize in our pedagogy, assessment methodologies, and in support of preparing ourselves to collaboratively create futures that liberate humanity and protect our biosphere.

The very challenges we face within our educational systems are also inspiring meaningful change and the rise of various future focused and holistic learning approaches incorporating exploratory and anticipatory methods

<sup>10</sup> <https://www.tomhierck.com/2014/11/11/what-is-the-value-added-in-schools-today/>

<sup>11</sup> [https://books.google.ca/books?id=fhliAwAAQBAJ&pg=PT21&source=gbs\\_toc\\_r&cad=2#v=onepage&q&f=false](https://books.google.ca/books?id=fhliAwAAQBAJ&pg=PT21&source=gbs_toc_r&cad=2#v=onepage&q&f=false)

which consider the whole person, complex challenges, and opportunities for collaborative, equitable, and just learning. The hope of many of the innovators who contributed to this research is that we may be at a turning point where education systems are ripe for a shift dedicated to addressing past wrongs and preparing us for the future. This shift will require us as learners and educators to cultivate a commitment to honoring the past while dedicating our best efforts to longer-term, sustainable approaches of inquiry, learning, and leadership that address the incredible challenges we face.

In response to the clear need for societal transformation toward viable futures, learning ecosystems are emerging as a practice of uniting diverse stakeholders in collective learning for mutually beneficial outcomes. This includes developing our collective intelligence to create collective impact with diverse stakeholders. Ecosystemic approaches are emerging across many sectors and disciplines as a natural response to increasing complexity, a way of organizing relationships and activities that go beyond institutional or societal silos. This shift in the context of education requires an evolution in our approaches to learning at all levels from birth to adult and elderhood. This report features emerging practices dedicated to the co-development of learning ecosystems and builds upon the work of the 2018 Global Education Futures (GEF) report “Educational Ecosystems for Societal Transformation” a result of GEF’s global education forums from 2014-2017. This work engaged over 500 leaders from 50 countries who were brought together to explore the future of education and how learning can be a leverage point for creating thriving futures for all.

The goal of this work is to illuminate how learning ecosystems can be a new horizon for evolving educational systems by showcasing (1) what skills, knowledge and ways

of being will help children, adults, and elders lead fulfilling and thriving lives, (2) why ecosystemic cultural practices, organisation processes, resources and execution can serve individuals and communities in their learning journeys throughout their whole lives, and (3) how educational systems can support human flourishing that will also transform our global society toward long-term resilience and thriving for humanity and the biosphere. This report suggests that holistic and life affirming learning ecosystems offer us optimal pathways to meaningfully engage in this complex and necessary inquiry.

The research that forms the foundation for this report explores the emergence of learning ecosystems as shaped by those who are leading the development of this practice around the world. This report features the insights from over 40 ecosystem leaders across the spectrum of education systems. The field of learning ecosystems is nascent and as such the body of research is only beginning to grow. The qualitative perspectives and insights from the leaders who were engaged through this research brought this report beyond what a purely quantitative data analysis may have provided. Whilst the examples of developing ecosystems in this report are by no means exhaustive, it does feature a wide array of cases that are at various stages of development, from a number of different countries, and diverse approaches to ecosystemic learning.

Contributors draw upon normative (the rules that you are supposed to follow vs. what could be done) definitions of ecosystems (explored in section 2.1 and 2.2) as guidelines, investigating how different sectors and disciplines use the term ecosystems as it relates to education and learning today. Normative definitions, including exploring the conditions of what learning ecosystems are, and are not, were identified to help clarify which case studies to

include in this research. Contributors (learning ecosystem leaders and their projects) were selected for interviews based upon demonstrated commitment to 1) intentionally integrating learning solutions and/or experiences for positive impact into their educational practices and, 2) engaging and organising in collaborative relationships with a diverse set of stakeholders both within and outside of academia. The perspectives represented in this report includes various approaches to A) organising education for lifelong learning pathways and, B) aligning learning processes with other domains, e.g. technological or social innovations. Various learning ecosystems featured in this research follow various types of dynamics, such as:

- **Ecosystems that create conditions for social or cultural innovation and development** (Social Innovation Canada Ecosystem represented by Joshua Cubista, The Evolutionary Learning Ecosystem initiative of the Metta Learning project in Argentina, represented by Alexander Laszlo, Ashoka represented by Laura Hay, ASCD as represented by Sean Slade, WISE represented by Zineb Mouhyi, Metaversity represented by Alena Surikova, Forum for the Future represented by Daniel Ford, Buckminster Fuller Institute represented by David McConville & Kurt Przybilla)
- **Ecosystems that create conditions for increased just and fair opportunities in circumstances of gender, economic, and ethnical inequality** (Dream a Dream represented by Vishal Talreja, MI Sangre Foundation represented by Catalina Cockduque, TAPP Foundation represented by Gaby Arenas, Imagination Afrika represented by Karima Grant, Fair Education Alliance represented by Gina Cicerone)

- **Ecosystems that support technological innovations and development of teams of technological entrepreneurs and developers** (NMITE represented by Michael Stevenson, LenPoli-grafMash represented by Kirill Soloveychik, AkademPark represented by Levan Tatumashvili)
- **Ecosystems that become a layer of urban civic development and expand citizen opportunities for learning and wellbeing** (Cities of Learning at the RSA represented by Rosie Clayton, LEGO Foundation represented by Halima Begum, Educaio360 represented by Ismael Palacin, CommunityShare represented by Joshua Schachter, Enrol Yourself represented by Zahra Davidson, LearnLife represented by Stephen Harris, The Weaving Lab represented by Ross Hall, Redes De Tutoria represented by Gabriel Camara, Autens represented by Lene Jensby)
- **Ecosystems that support regenerative economies in connection with respective bioregional ecosystems** (OPEPA represented by Luis Camargo, Cultural Evolution Lab represented by Joe Brewer, UMA represented by Victoria Haro)

Additionally, a set of stakeholders intentionally working to deepen knowledge on learning ecosystems were engaged to contribute to this research. These include groups such as the Innovation Unit, Global Education Leaders Partnership, Forum for the Future, KnowledgeWorks Foundation and the University of Cambridge. Furthermore, the co-authors of this report have convened a number of ecosystem acceleration programs and ecosystem learning initiatives that add to the perspectives outlined throughout. These programs, conducted with and by actual and emerging ecosystemic leaders, served as laboratories for co-developing and verifying many

frameworks presented in this report. More details on some of this work can be found in Section 4.4. Contributions were initially examined collectively through thematic analysis (drawing out themes) to examine patterns and gain new insights from those in the field on the emergence of learning ecosystems in various contexts.

This research explores 1) how practitioners and leaders are defining educational or learning ecosystems, 2) the motivations inspiring the creation of learning ecosystems, 3) the perceived purpose of learning ecosystems, and 4) enablers and hindrances for the conditions of learning ecosystems to grow. Across these areas of interest it has been identified that relationships are particularly integral to what defines and shapes a learning ecosystem, therefore the types of relationships and collaborations supportive to a flourishing learning ecosystem we explored as well as the roles necessary for ecosystemic learning and the leadership required for learning ecosystems to thrive.

As with all research this work inevitably has its limitations. The case studies and interviewees included in this report (whilst spanning a variety of countries and continents) do not include as many perspectives from Asia and Africa as it does in Europe, North America, and South America. In general, this report presents a western 'scientific' reflection upon the future of education and the emerging practice of learning ecosystems. The co-authors also bring their specific biases to this work shaped by past experiences, places of origin (Russia, the UK and Canada), and the educational and cultural systems that continue to influence this work. Furthermore, while this report reflects a potential trajectory for the future of learning, many of the interviewees and co-authors alike are working within the very siloed, industrial education systems this work seeks to shift. An even greater range of representation was not possible mostly due to the timeframe within

## Signposting

Interested in understanding more deeply the major challenges of today?

→ **Section 1**

(page 1)

Interested in understanding the definitions and purposes of ecosystems?

→ **Section 2.2 and 2.3**

(page 46-58)

Interested in what the skills of an Ecosystem Thrivalist are?

→ **Section 4.1**

(page 92)

Interested in key emerging principles of Learning Ecosystems?

→ **Section 5.1**

(page 122)

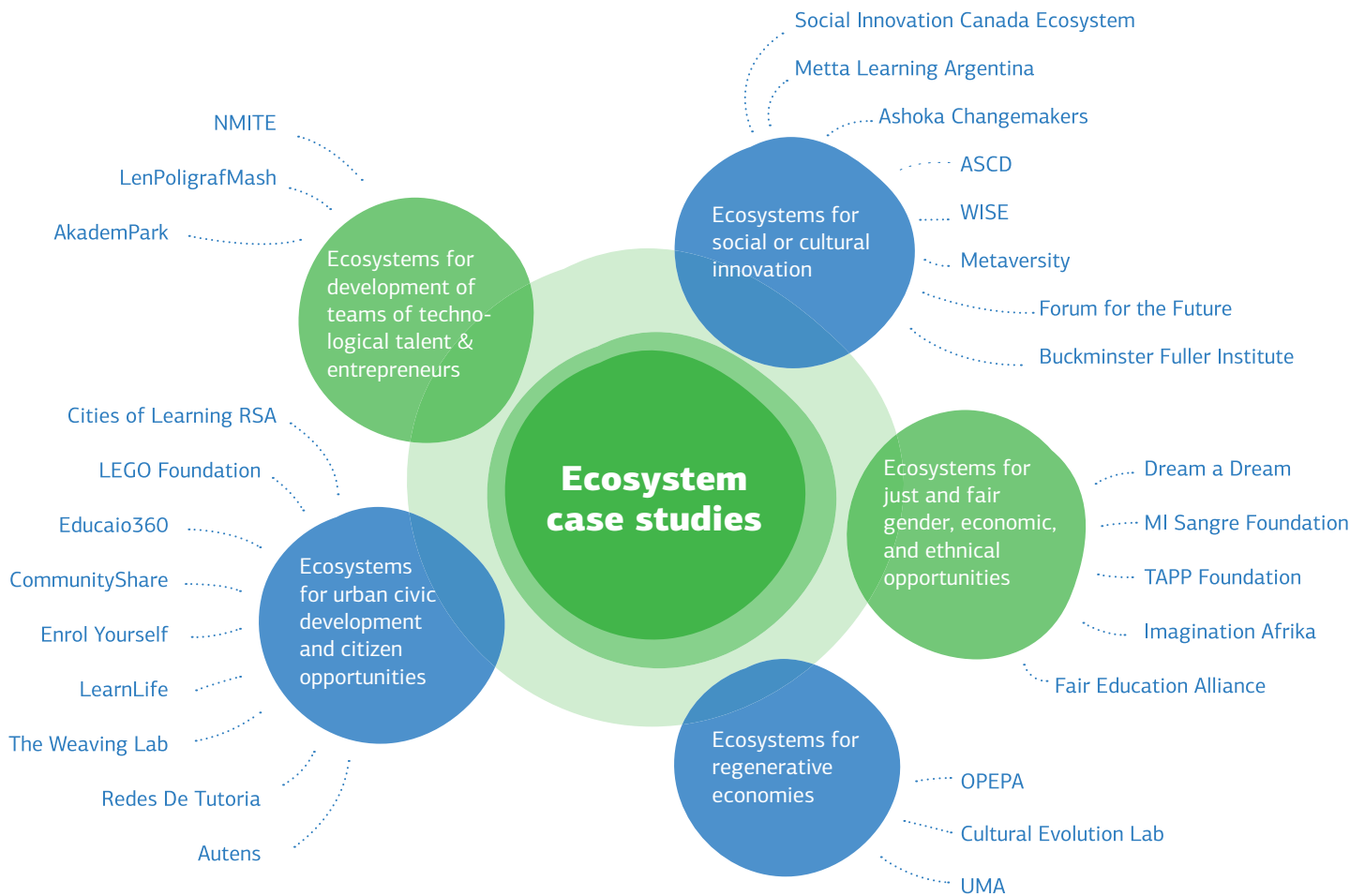
Interested in tools for a Learning Ecosystem workshop?

→ **Appendix 3 and 4**

(page 155)

which this research was conducted and limitation of available resources. Further research is needed to include more diverse voices including indigenous Elders, leaders, and educators, artists and makers, and cultural creatives across a broader spectrum of contexts such as the social justice movement, ecovillages, charter schools, the human potential movement, and the knowledge economy at-large. Your feedback, insight, and collaboration in shaping where this research goes from here would be greatly welcomed and appreciated. Please feel free to propose future research opportunities and initiatives to expand the scope of this work.

This report is intended to engage readers, scholars, and practitioners in the continued



exploration of how learning ecosystems may serve as an emerging praxis for the future of education. This work reflects a shift in leadership from industrial to ecosystemic, and learning from modeling assembly-lines to living systems. This shift requires an evolution in strategy, and the engagement of multi-stakeholders in building capacities as ecosystem thralists (see section 4.2 for a definition). This report features diverse ways in which contributors both perceive and are working toward shaping the future of learning through ecosystemic approaches, and invites education leaders to become gardeners of learning ecosystems disrupting the status quo and weavers to co-create powerful collab-

orations that support the self-organization of ecosystem actors into mutually beneficial intentional relationships. Section 4.5 of this report will go on to show the lifecycle of an ecosystem based on current emerging practices, as well as how to accelerate the success of ecosystemic learning. We conclude in sections 5.1 and 5.2 with reflections upon our global education futures and exploring how we can co-create and engage one another in the rising momentum of this work through proposing emergent guiding principles and practices that can support the cultivation of personal, place-based and planetary learning ecosystems. ■

# EDUCATION as an ORGANIC ELEMENT of LIFE ECOSYSTEMIC TRANSFORMATION



WE LIVE in a HYPER  
CONNECTED WORLD

COMPLEXITY  
VOLATILITY  
AMBIGUITY  
UNCERTAINTY

focus on  
WELLBEING  
and LEARNING

VISION  
UNDERSTANDING  
CLARITY  
AGILITY

DIVERSE and  
REGENERATIVE  
CULTURES



A large tree with thick, gnarled roots in the foreground and a green lawn in the background.

**1**

# **Introduction: The Future of Learning**

# 1.1

## 21st Century Challenges and Opportunities

We are living in a time when the effects of accelerating complex change and crisis are having a profound impact on the trajectory of human and planetary systems. The pressures created by some of these dynamics are massive and need our urgent attention. The following is not an exhaustive list of challenges facing humanity, but rather, points to the kind of interrelated and complex challenges that present opportunities for how we might navigate and shape our future:



### Threats of Living Systems and Societal Collapse

While industrial civilization has brought billions of people out of poverty, hunger, and supported westerns scientific advancements, such as the amelioration of many diseases, it has also enabled the human species to massively increase in population while at the same time deeply reinforce social, economic, class, and political divides. Furthermore, the colonization and economic imperialism

between human groups and the human colonization of our biosphere is threatening the very planetary living systems upon which all life depends. We are now living beyond Earth's carrying capacity and outside of healthy "planetary boundaries"<sup>12</sup> which is leading to the destruction and degradation of living systems and the planetary systems at such a scale that many scholars are suggesting that we are now entering a period of the sixth extinction of life on the planet<sup>13</sup>. Unless the course of global civilization is changed in the next decades, humanity as it is today may not survive beyond the 21st century<sup>14</sup>. Crisis' such as climate change, which disproportionately affects the most vulnerable in global society, has the potential, by itself, to completely alter life on Earth<sup>15</sup>. While indicators such as the Sustainable Development Goals approved by the UN, point to a potential readiness of nation states to move toward sustainable and regenerative long-term development strategies, so far associated efforts do not match the severity and scale of challenges we are experiencing and will face in the future. In order to avoid threats of living systems and societal collapse we need to interrogate and evolve how we navigate our lives, our relationships to each other and Earth, and how we envision our shared future. Evolving our narratives, individually and collectively, about the trajectory of our lives and our species will be a prerequisite to surviving the collapse of civilization as we know it. The liquidity<sup>16</sup> of our time in history and the increasingly networked<sup>17</sup> dynamics of the 21st century require us to evolve our consciousness and develop our capabilities and as a human species to equitably co-create just futures in our biosphere.

<sup>12</sup> <https://www.stockholmresilience.org/research/research-news/2015-01-15-planetary-boundaries---an-update.html>

<sup>13</sup> [https://books.google.co.uk/books/about/The\\_Sixth\\_Extinction.html?id=MOGeAgAAQBAJ&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/The_Sixth_Extinction.html?id=MOGeAgAAQBAJ&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

<sup>14</sup> [https://www.researchgate.net/publication/291086909\\_12\\_Risks\\_that\\_threaten\\_human\\_civilisation\\_The\\_case\\_for\\_a\\_new\\_risk\\_category](https://www.researchgate.net/publication/291086909_12_Risks_that_threaten_human_civilisation_The_case_for_a_new_risk_category)

<sup>15</sup> <https://www.ipcc.ch/sr15/>

<sup>16</sup> [https://books.google.co.uk/books/about/Liquid\\_Modernity.html?id=xZORAAAQBAJ&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/Liquid_Modernity.html?id=xZORAAAQBAJ&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

<sup>17</sup> [https://books.google.co.uk/books/about/The\\_Rise\\_of\\_the\\_Network\\_Society.html?id=FihjywtjTdUC&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/The_Rise_of_the_Network_Society.html?id=FihjywtjTdUC&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)



## (Hyper)connectivity

There are over 4 billion users of internet and nearly 3 billion people that own smartphones, spending on average more than 6 hours a day online<sup>18</sup>. Over the last decades, the world has become woven into a global network of information and social media. We are probably the only species in a billion years of history of life instantly connected at the planetary scale. Some of the dominant social structures that have been guiding our civilization in past centuries, such as governments, finance, education, religion, are expected to be “dissolved” and transformed by the fact that we are globally connected, and new structures of governance will emerge. This creates opportunities beyond our imagination but are also deeply in conflict with how our brains and cultures evolved over millennia, serving our need to live in small and isolated communities of a few dozen to a few hundred people<sup>19</sup>. In today’s world, we are facing epidemics of loneliness both in urban and rural areas that information overload and post-truth social media have divisively exacerbated, while hyperconnectivity has paradoxically increased feelings of isolation. Additionally, the possibility for expanded patterns of immobilization for certain individuals and groups, can ultimately, for example, constrain democracy, create inequalities, and support neoliberalism.<sup>20</sup> The rise of a data-driven “surveillance capitalism” fused with a surveillance state, in particular, is very risky, as it paves the pathway for tyrannies of an unprecedented scale<sup>21</sup>. Ultimately, this

global network can bring us extreme connect- edness and extreme disunity. We should look to challenge both effects on our “humanness” – and, as David Rushkoff argues, possibly to retake our ability to be the “Team Human”, to connect and cooperate<sup>22</sup>.



## Automation and Industry 4.0

There has been a wave of innovation in the digital sector, from new materials to robotics, which have the potential to disrupt every aspect of the global economy. One of the greatest unfolding impacts is the transformation of the world of work, with nearly 50% of global workplaces jeopardized in the next 15-20 years, and currently without adequate replacement. In the next couple of decades, continuing development of artificial intelligence technologies is expected to lead to the rise of smart machines of comparable or greater capacity than the human brain. The threat is also that not only are machines potentially going to be faster and smarter, but they “think” differently.<sup>23</sup> The prospects of such developments are outstanding, but so are the risks. As a consequence, currently, the rise of “unfriendly” artificial general intelligence is considered as one of the main future threats for our civilization.<sup>24</sup>

<sup>18</sup> <https://www.internetworldstats.com/stats.htm>

<https://techjury.net/stats-about/smartphone-usage/#gref>

<https://www.digitalinformationworld.com/2019/02/internet-users-spend-more-than-a-quarter-of-their-lives-online.html>

<sup>19</sup> <https://www.hup.harvard.edu/catalog.php?isbn=9780674363366>

<sup>20</sup> <https://global.oup.com/academic/product/risk-and-hyperconnectivity-9780199375509?cc=ro&lang=en&>

<sup>21</sup> <https://www.theguardian.com/technology/2019/jan/20/shoshana-zuboff-age-of-surveillance-capitalism-google-facebook>

<sup>22</sup> <https://rushkoff.com/books/team-human-book/>

<sup>23</sup> <https://www.bbvaopenmind.com/en/technology/artificial-intelligence/ai-systems-dealing-with-human-emotions/>

<sup>24</sup> <https://www.bbvaopenmind.com/en/technology/artificial-intelligence/ai-systems-dealing-with-human-emotions/>



## High Risk/High Potential Technologies

Apart from artificial intelligence, a plethora of promising but risky technologies are being developed by researchers around the globe<sup>25</sup>. Nuclear energy was one of the first such technologies in the middle of the 20th century, but there are many technologies currently being developed that have an even greater transformative and destructive capacity. In the life sciences, genome manipulations have become commonplace, and a recently discovered CRISPR\* process opens the pathway to changing the genome of already developed organisms<sup>26</sup>. In material sciences, the advance of nanotechnology and the possible development of molecular machines creates opportunities for manipulating matter at the atomic level<sup>27</sup>. These technologies, as they become widespread, can transform the world at the scale unseen, giving our species a capacity to directly operate the foundations of the material world. These technologies may improve our collective wellbeing and act to the benefit of all life but they can also be a tool for its destruction.

## VUCA world

As a consequence of these big drivers of change, the modern world today is increasingly described using the following acronym VUCA (See Figure 1), which translates to volatile, uncertain, complex & ambiguous. A state which ultimately makes it difficult to predict specific or desired outcomes as a result of an increasingly interconnected, 'globalised' world. In the words of Donella Meadows "The world is a complex, interconnected, finite, ecological-social-psychological-economic system. We treat it as if it were not, as if it were divisible, separable, simple, and infinite. Our persistent, intractable, global problems arise directly from this mismatch"<sup>31</sup>.



## Demographic Transitions

Technological revolution, with all its hurdles, has boosted human longevity all over the globe. Urbanization, agricultural "green revolution", improved healthcare, family planning and birth control methods have all contributed to the deceleration of population growth. A demographic transition (to low birth – low mortality – high longevity) has already occurred around the globe, and some remaining regions with a higher birth rate (e.g. South Asia and Africa) show the signs of slowing down. UN

<sup>25</sup> <http://reports.weforum.org/global-risks-2017/>

<sup>26</sup> <https://www.statnews.com/2019/10/21/new-crispr-tool-has-potential-to-correct-most-disease-causing-dna-glitches/>

<sup>31</sup> <http://donellameadows.org/wp-content/userfiles/Whole-Earth-Models-and-Systems.pdf>

<sup>32</sup> <https://hbr.org/2014/01/what-vuca-really-means-for-you>

\* <https://en.wikipedia.org/wiki/CRISPR>



**Figure 1.** Definition of VUCA<sup>32</sup>

anticipates that the humankind will stabilize at a little over 10 billions around the end of 21st century<sup>28</sup>, unless our society runs into a catastrophic technological, social, or environmental event that we have considered above. This transition will have many implications for education and beyond. The global senior population (above 65) will reach 2 billion, doubling between 2020 and 2050, while the young population will stagnate<sup>29</sup>. A remarkable share of economic, political, and educational transitions will therefore be driven by opportunities for senior people, and it will call the need for redesigning lifelong learning models. Young people, in their turn, increasingly shift towards a “never ending childhood”<sup>30</sup>, spending their young age (which now goes to 30 and above) exploring, connecting, and playing. We have to remind ourselves that life expectancy at the beginning of 19th century was below 40 years – and it was the time when key institutions of the industrial era, including schools, universities, job markets, armies, and pension systems, were designed. The recognition that we have become a long living species starts to take root, with multiple cultural and regulatory adjustments to follow.

~

We witness in response to these pressures a movement rising around the world questioning previous concepts and norms drawing us towards a more holistic way of being. One of the most alarming characteristics of this period has been the exponential growth of

mental health issues, a worldwide epidemic with 10-20% of children and adolescents experiencing mental disorders, with half of all mental illnesses arising by the age of 14<sup>33</sup>. One in ten teenagers in the UK, for example, express anxiety about current world affairs<sup>34</sup> and the shrinking exposure to nature and increased screen time also plays its part in the decline of youth mental wellbeing<sup>35</sup>. Perhaps, given the conditions of modern living as previously discussed, it's not all that surprising. Pressures to live within the status quo version of societal norms are compounded by constant social media and hourly news relentlessly bombarding people with doom and gloom, consumerist values, and divisive narratives<sup>36</sup>.

There is an increasing recognition that young people in many places around the world aren't being taught how to navigate the VUCA maze in a healthy, sustainable way that they value. In a new report from World Skills we learn that only 20% of young people (from 15,000 respondents in 19 different countries) value their education<sup>37</sup> and according to the Every Child to Flourish research report, 83% of youth feel they are not prepared to live in the world today. They are particularly alarmed at the lack of focus and attention paid to their own health, responding with comments like “I think my mental health is the most important thing. If I learn a lot, and my mental health is not good, I still won't be happy<sup>38</sup>.” It seems that their parents agree, as we also witness an increasing number of parents strive for alternatives, with many choosing to educate their children at home predominantly due to concern for their child's wellbeing<sup>39</sup>. They are concerned that their children are unhappy at school and finding mainstream schooling unmotivating and uninspiring, consequently leading to a rise in parent-led establishment of schools. **Acton Academy** for example, rely on the approach of only allowing new schools to be established if the founder also sends their own child there<sup>40</sup>.

<sup>28</sup> <https://www.un.org/development/desa/en/news/population/world-population-prospects-2019.html>

<sup>29</sup> <https://www.pewresearch.org/fact-tank/2014/02/03/10-projections-for-the-global-population-in-2050/>

<sup>30</sup> <https://www.edge.org/response-detail/10411>

<sup>33</sup> [https://www.who.int/mental\\_health/maternal-child/child\\_adolescent/en/](https://www.who.int/mental_health/maternal-child/child_adolescent/en/)

<sup>34</sup> <https://stem4.org.uk/stem4-survey-reveals-childrens-parents-concerns-mental-health/>

<sup>35</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6104990/>

<sup>36</sup> <https://www.ncbi.nlm.nih.gov/pubmed/30406005>

<sup>37</sup> <https://worldskills.org/what/projects/youth-voice/>

<sup>38</sup> <https://hundred.org/en/research>

<sup>39</sup> <https://www.educationnext.org/home-schooling-goes-mainstream/>



## Learning for the future work

If we look to the world of work, the volatility around employment is causing deep concern where our jobs and professional opportunities are now rapidly and frequently changing. Whereas previous positions and processes were more predictable, they are now constantly and rapidly developing and evolving; we see this in the rise of the sharing (Uber and Airbnb style) economy<sup>47</sup>. As a consequence, self-awareness and continual development of skills and competencies are becoming imperative not only for young people, but for all adults. We are told that we will be required to evolve from resisting change to embracing it agilely and adaptively<sup>48</sup>. We also personally do not exhibit, in general, the same loyalty which previously may have been attractive to us. Instead not only craving, but requiring the freedom to be adaptive in our working life that makes the instability worthwhile. We are much more likely to leave if the culture, leadership or work is unfulfilling as we expect more horizontal leadership and a commitment to growth, learning and development at a personal level<sup>49</sup>. There are a lack of models to explain current jobs and the marketplace which may be evolving but what we do understand is that there is, and will continue to be, disruption and a struggle to get work. An international research alliance on the future of skills created by WorldSkills Russia aims to consolidate key understandings and frameworks that emerge in this field. We witness in response schools and communities developing programs such as, Educate!, who tackle youth unemployment by partnering with schools and governments to reform what schools teach and how they teach it

so that students in Africa have the skills to attain further education, overcome gender inequities, start businesses, get jobs, and drive development in their communities. They provide, for example, skill based courses, student business clubs and mentorship and teacher training.

Foundation for Young Australians is another example of a systemic effort to help young people develop skills for the future. They seek to understand the future of jobs and most demanded skills for the next decade in Australia, and then turn the knowledge gained from the research into action, co-designing programs and events for young people, with young people in collaboration with educational institutions and government as well as corporate and philanthropic partners.

Russian Atlas of Emerging Jobs\* created by GEF in 2014 is the world-largest “compendium” of jobs of the future. This study has been cocreated with hundreds of leading national & international employers, startups, academia, regulators, and NGOs from over 30 sectors that co-defined sectoral “maps of the future”, identified new job roles and described over 200 new careers. Atlas offers a positive and inspiring vision of the future, and encourages teenagers, families, teachers, and administrators learn to think critically about the future of work. Atlas has become an “acupuncture intervention” that has catalyzed changes in universities, schools, and regional education systems across the country, and inspired dozens of projects in complementary education and career advising.

<sup>47</sup> [https://books.google.co.uk/books?hl=en&lr=&id=2Zz2CwAAQBAJ&oi=fnd&pg=PR7&dq=rise+in+sharing+economy&ots=sJqb-VaM2-h&sig=WOa1LquijyW8qXmWdjFx\\_B69REs#v=onepage&q=rise%20in%20sharing%20economy&f=false](https://books.google.co.uk/books?hl=en&lr=&id=2Zz2CwAAQBAJ&oi=fnd&pg=PR7&dq=rise+in+sharing+economy&ots=sJqb-VaM2-h&sig=WOa1LquijyW8qXmWdjFx_B69REs#v=onepage&q=rise%20in%20sharing%20economy&f=false)

<sup>48</sup> [http://www.globaledufutures.org/images/people/WSdoklad\\_12\\_okt\\_eng-ilovepdf-compressed.pdf](http://www.globaledufutures.org/images/people/WSdoklad_12_okt_eng-ilovepdf-compressed.pdf)

<sup>49</sup> <https://www.bbc.com/worklife/article/20180227-how-the-youngest-generation-is-redefining-work>

\* <http://atlas100.ru/en>

Holistic education, of which mindfulness is a subset, has been growing rapidly in response to the above, and the evidence to support its usefulness in all fields has grown as well. American Mindfulness Research Association (AMRA), for example, has now chronicled more than 3700 studies published on mindfulness, reflecting an exponential rise from 0 publications in 1980 to 690 in 2016 and 692 in 2017<sup>41</sup>. Operating within a VUCA context we witness a desperation to understand how our experiences and environments can foster better opportunities for wellbeing. Many mainstream schools try to respond to this crisis with mindfulness-based programs, such as the UK based [MindUP](https://uk.mindup.org/)<sup>42</sup>, Indian based [SMILES](https://www.smilesinlife.org/)<sup>43</sup> and Australia launched [Smiling Mind](https://www.smilingmind.com.au/)<sup>44</sup>. When embraced, as noted by Bronwen Rees, mindfulness has the capacity to transform the VUCA conditions into those of opportunity so that:

Complexity leads to <b>Clarity</b>	Ambiguity leads to <b>Agility</b> <sup>45</sup>
Volatility leads to <b>Vision</b>	Uncertainty leads to <b>Understanding</b>

Yet, whilst these approaches are well-intended and mindfulness can play a role in alleviating stress, introducing a one-off program often only addresses the symptoms of a systemic problem. Approaches thus become add-ons where people squeeze time for these moments, rather than resolving the root cause of the systemic issues. As a result, we are beginning to see in response whole school models, as well as community models, changing with approaches instilled across the whole culture at the deeper, fundamental levels, such as [Geelong Grammar School](#)<sup>46</sup>, developed from the principles and science of the positive psychology movement. They have pioneered a school-wide approach to student and staff wellbeing known as Positive Education, sharing and influencing their work with over 1000 communities worldwide.

At the collective and wider planetary scale we see deep impact from changes in society today. The World Economic Forum annual survey explores what are perceived to be the biggest issues in the world<sup>50</sup>. The scope and severity of these issues are apparent, including a lack of education being the 8th most critical, inequality at 3rd and climate change at number 1. This continual perceived risk and threat is ever present and as we move beyond analysing the effect at the individual, micro level we can see the collective impact of these issues. When we look to other international organisations, according to the UN, for example, there are a great variety of global issues that represent risks of various magnitudes for society. These include elements such as human health and demography, like AIDS or ageing, as well as challenges of national and global governance, such as peacekeeping

<sup>40</sup> <https://www.actonacademy.org/>

<sup>41</sup> [https://www.academia.edu/38824229/Mindfulness\\_in\\_and\\_as\\_education\\_A\\_Map\\_of\\_a\\_Developing\\_Academic\\_Discourse\\_from\\_2002\\_to\\_2017](https://www.academia.edu/38824229/Mindfulness_in_and_as_education_A_Map_of_a_Developing_Academic_Discourse_from_2002_to_2017)

<sup>42</sup> <https://uk.mindup.org/>

<sup>43</sup> <https://www.smilesinlife.org/>

<sup>44</sup> <https://www.smilingmind.com.au/>

<sup>45</sup> [https://www.researchgate.net/publication/316781034\\_The\\_Use\\_of\\_Mindfulness\\_in\\_a\\_Traumatic\\_VUCA\\_World](https://www.researchgate.net/publication/316781034_The_Use_of_Mindfulness_in_a_Traumatic_VUCA_World)

<sup>46</sup> <https://www.ggs.vic.edu.au/>

<sup>50</sup> <https://www.weforum.org/reports/the-global-risks-report-2019>



or decolonization<sup>51</sup>. Similar and further lists have been identified by organisations such as the Global Challenges Foundation<sup>52</sup> that looked at the list of existential threats to the humanity, top ones being thermonuclear warfare, hostile Artificial Intelligence, and biosphere collapse. 17 Sustainable Development Goals<sup>53</sup> set up by the United Nations in 2015 which represent one of the most outward, public global efforts of 193 nation states and numerous global businesses and NGOs to recognize these challenges and to work together to save ourselves and our planet. However, the coordinated action of the world's leading superstructures is a necessary but not a sufficient solution to the challenges of our time. Drawing upon extensive research in previous Global Education Futures reports and beyond, it seems that we need a decentralized and coordinated effort of many change leaders that occurs at the global scale. The critical condition is that a critical connections of “changemakers” around the world arises through new forms of education.<sup>54</sup>

“In order for global culture to be infused with regenerative societal practices and for new systemic literacy’s and patterns to take root that foster “anti-fragility”, these practices must become massively distributed skill-sets, mastered by a critical mass of people within the population [through] educational prototypes and learning ecosystems that support personal, collective and global thriving.”<sup>55</sup>

In the face of the dynamics and possibilities we are bombarded by multiple and cumulative stresses at the individual level leading to increased levels of stress and burnout<sup>56</sup>. At the community level people are increasingly disconnected from each other and opportunity gaps are widening<sup>57</sup>. At the planetary level we are in a state of ecological and political crisis<sup>58</sup>. That said, it is important to note that humanity made enormous strides by thinking and acting in analytical, mechanistic and industrial ways. Over the course of the twentieth century, life expectancy in the industrial world roughly doubled, literacy jumped from twenty percent to over ninety percent and benefits arrived in the form of products, medicine, communication, education and entertainment<sup>59</sup>. Yet now, regardless of what we have achieved we witness floundering in the shock of complexity. We are unprepared to live in an hyper-interconnected world, exhausted and trying to constantly make sense of interdependent social, ecological, economic, and cultural dynamics.

In the education space we see a rise of outdated approaches to learning which is increasingly making education systems incongruent with learners needs. Determining, for example, what emerging generations need to learn when the skills they develop might become irrelevant, even just 10-15 years from now is a grand challenge. Couple this such things as the fear of biospheric collapse or societal extinction due to global issues like climate catastrophe and we see many educators and learners, families, communities, if not humanity at large facing an existential crisis that asks nothing less of us than reimagining how we shape our future together.

<sup>51</sup> <https://www.un.org/en/sections/issues-depth/global-issues-overview/>

<sup>52</sup> <https://globalchallenges.org/>

<sup>53</sup> <https://sustainabledevelopment.un.org/>

<sup>54</sup> <http://www.dailygood.org/story/1496/it-s-about-critical-connections-not-critical-mass-curtis-ogden/>

<sup>55</sup> [http://www.globaledufutures.org/images/people/GEF\\_april26-min.pdf](http://www.globaledufutures.org/images/people/GEF_april26-min.pdf)

<sup>56</sup> [https://www.who.int/mental\\_health/evidence/burn-out/en/](https://www.who.int/mental_health/evidence/burn-out/en/)

<sup>57</sup> [https://www.tnlcommunityfund.org.uk/media/Bringing-people-together\\_how-community-action-can-tackle-loneliness-and-social-isolation.pdf?mtime=20190701084743](https://www.tnlcommunityfund.org.uk/media/Bringing-people-together_how-community-action-can-tackle-loneliness-and-social-isolation.pdf?mtime=20190701084743)

<sup>58</sup> [https://books.google.co.uk/books?hl=en&lr=&id=-Sri\\_ZjX2hoC&oi=fnd&pg=PR9&dq=ecological+crisis&ots=-gCOJvvg6q&sig=yPQNmR6QXpyW-g3hlygl\\_xKIEIDQ#v=onepage&q=ecological%20crisis&f=false](https://books.google.co.uk/books?hl=en&lr=&id=-Sri_ZjX2hoC&oi=fnd&pg=PR9&dq=ecological+crisis&ots=-gCOJvvg6q&sig=yPQNmR6QXpyW-g3hlygl_xKIEIDQ#v=onepage&q=ecological%20crisis&f=false)

<sup>59</sup> <https://www.amazon.com/Thinking-about-Complexity-Continuum-Criticism/dp/0984216456>

At this unique point in history it is increasingly apparent that there are many conditions in which we could live that fit any possible need. Almost all that we can imagine is accessible to a huge population of the globe and our world is brimming with an extreme excess of material things and data. We are faced with more vital questions for today's society: what use can we make of our reimagining? How effectively and "futurefully" could we manage this scenario? What is valuable from possessing or operating in this way? At the center of many of these questions the role of education is key. It seems that we must shift away from concentrating on only information digesting towards designing new meaning and solutions, ensuring our learners have the instruments, processes, freedom, space and technologies to do so in the most effective way. This could then provide a way to access many opportunities, collating, prototyping and using data in different, organic and emerging ways. This could support better goal setting and decision making and finding meaningful education, which helps learners to deal with redundancy and develop skills such as critical thinking and self-regulation.

Yet to do so at the individual level does not imply that we should be moving to an increasing model of individualism, quite the opposite. This reality requires us to be collective-oriented, taking into account everyone's impact on the whole system. Collective thriving is a question of value-based collective problem solving and of high-level concurrence, which, in its turn, requires a new social scenario. When organising this way we see the formation of active and responsible communities acting as a collective entity for the greater good. Daniel Christian Wahl, regenerative systems designer, shows us for example that "this insight can motivate people to assume conscious respon-

sibility for their role as change agents in the transition towards diverse regenerative cultures<sup>60</sup>." We can see this shift toward shared responsibility occur when we look to certain 'innovations' in education, such as the concept of Flexible Seating, made popular by teacher/influencer Kayla Delzer, who's work highlights the power of individual change agents' ability to influence thousands of teachers at the grassroots level<sup>61</sup>. In this case, rethinking the importance of the environment on wellbeing and learning, Kayla's innovative work is an example of the power that communities have to shape knowledge systems that support collective thriving. Learning how to work together at this local scale enables us to reconnect with lost sense of belonging and wellbeing which, as highlighted above, are and have been in severe decline<sup>62</sup>. We can deepen our sense of purpose and belonging on a lifelong journey of learning to improve our community. This can be through our own passion based pursuits for personal deeper well being and joy, especially through our artistic crafts and play, as well as connection towards clear, action oriented design projects to improve many aspects, like [Design for Change](#)<sup>63</sup> who enable children to feel, imagine, do and share on local projects.

The entire human race has a shared destiny, and we are all in this together — there is no separation technologically or via infrastructure that can isolate us from each other or our intertwined future. Learning and education can be a leverage point for us to co-create and implement pathways towards a sustainable and regenerative future. It is imperative then, to avoid mass extinction or global war, that we evolve our education systems so that we can learn how to live together in the 21st century and beyond.

<sup>60</sup> <https://books.google.co.uk/books?hl=en&lr=&id=dOSqDwAAQBAJ&oi=fnd&pg=PT15&dq=designing+regenerative+cultures&ots=Ci0Q-5DATZr&sig=6lxf40ylfK67-oSB5VA5ptrL14A#v=onepage&q=designing%20regenerative%20cultures&f=false>

<sup>61</sup> <http://www.topdogteaching.com/>

<sup>62</sup> [https://belonging.berkeley.edu/notesonaculturalstrategy?mc\\_cid=d2fbc76dd4&mc\\_eid=bd552e09ab](https://belonging.berkeley.edu/notesonaculturalstrategy?mc_cid=d2fbc76dd4&mc_eid=bd552e09ab)

<sup>63</sup> <https://www.dfcworld.com/SITE>

# 1.2

## The Future of Education

Existing educational institutions and systems, more often than not, tend to invest in conventional industrial processes that continue to reproduce outdated pedagogies that often deepen inequalities such as structural racism<sup>64</sup> a phenomenon clearly evident, for example, in public school systems enforcing the school-to-prison pipeline<sup>65</sup>. These processes and models can be deeply dehumanizing and to address many of the global challenges outlined above we need to find ways to get back in touch with humanity. Elements then, like mindfulness, will have a greater change to organically flourish across humanity. Therefore, one of the key goals of education is to form our core of principles and practices to “unlock” personal and collective humanity. The public sector, in general, has not enabled this as they make requirements for defining detailed rules, standardizing methods, and evidencing and measuring outcomes, to make school work as ‘efficient’ as possible, like a well-oiled machine<sup>66</sup>. This appears to be done with the mindset that if people are told exactly what to do and this work is evaluated with the same set of standards, then they will comply and efficiency will improve. In comparison, the private sector operates almost entirely in the opposite way, through increasing deregulation riding the invisible hand of the market

to lead to optimal outcomes through competition. Again though, this economic model is still largely modelled as if it worked predictably and controllably, moving inexorably towards ‘equilibrium’ and yet can perpetuate many of the issues of inequality and social injustices we have witnessed in capitalist markets. Despite current crises, these persist as dominant models even with evidence of failing. For example, the UK continues to focus on defined detailed teaching methods and lesson plans, and increasing measurement and performance of schools, teachers and pupils but in a wider ranking is still near the bottom of 24 countries in relation to literacy and numeracy<sup>67</sup>. We’re also seeing a continued rise in inequality with the UK 28th out of 34 OECD countries in relation to income inequality, and at the bottom of 37 countries in relation to differences in healthy eating between rich and poor children<sup>68</sup>.

It is hardly surprising then that stakeholders across the world feel that education needs improvement in a multitude of ways<sup>69</sup>. Research exploring Global Perspectives on Improving Education found 10 major themes, with an overarching 45 areas that need to improve, spanning the entirety of educational systems. The call to improve across the educational system spectrum was largely deemed necessary due to the lack of connection and collaboration between stakeholders leading to limiting patterns of institutional and pedagogical silos. In response to these issues, new approaches to learning and education are emerging as educational innovation leaders reimagine learning for the 21st century. ‘Innovation’ spotters (as coined by Brookings<sup>70</sup>) for example, showcase the work of organisa-

<sup>64</sup> See links: [https://journals.co.za/docserver/fulltext/high\\_v32\\_n5\\_a5.pdf?expires=1574785245&id=id&accname=guest&checksum=C-C8114926686A33D319FED5321E02981](https://journals.co.za/docserver/fulltext/high_v32_n5_a5.pdf?expires=1574785245&id=id&accname=guest&checksum=C-C8114926686A33D319FED5321E02981)  
<https://journals.sagepub.com/doi/abs/10.3102/0091732X16686949?journalCode=rrea>  
[https://www.researchgate.net/profile/Maria\\_Balarin2/publication/328743543\\_The\\_Ungoverned\\_Education\\_Market\\_and\\_the\\_Deepening\\_of\\_Socio-economic\\_School\\_Segregation\\_in\\_Peru/links/5be043b8299bf1124fbbf2c6/The-Ungoverned-Education-Market-and-the-Deepening-of-Socio-economic-School-Segregation-in-Peru.pdf](https://www.researchgate.net/profile/Maria_Balarin2/publication/328743543_The_Ungoverned_Education_Market_and_the_Deepening_of_Socio-economic_School_Segregation_in_Peru/links/5be043b8299bf1124fbbf2c6/The-Ungoverned-Education-Market-and-the-Deepening-of-Socio-economic-School-Segregation-in-Peru.pdf)

<sup>65</sup> <https://www.tolerance.org/magazine/spring-2013/the-school-to-prison-pipeline>

<sup>66</sup> [https://www.researchgate.net/publication/5099692\\_Standardization\\_Education](https://www.researchgate.net/publication/5099692_Standardization_Education)

<sup>67</sup> <http://www.oecd.org/pisa/>

<sup>68</sup> <https://data.oecd.org/united-kingdom.htm>

<sup>69</sup> <https://hundred.org/en/research> (Every Child to Flourish)

<sup>70</sup> <https://www.brookings.edu/book/leapfrogging-inequality-2/>

tions such as Ashoka<sup>71</sup>, Harvard Graduate School of Education<sup>72</sup> and HundrED<sup>73</sup> and Global Education Futures, all of which (among others) are working to bridge the gap between past education models and future possibilities.

As suggested above, the future of education will be shaped by the context of the 21st century in which institutions and communities alike must wake up to the challenges of our times. We will need to bridge between education systems designed primarily for individual learning and personal benefit to collective learning and capacity building to shape our future together and fostering mutual success while addressing the “wicked problems” before us.

As described by the work of Horst Rittle<sup>74</sup>, wicked problems

- 1)** have no definitive formulation (for example, the problem of poverty in Texas is grossly similar but discretely different from poverty in Nairobi, so no practical characteristics describe “poverty.”)
- 2)** It’s hard, maybe impossible, to measure or claim success with wicked problems because they bleed into one another, unlike the boundaries of traditional design problems that can be articulated or defined by single solutions.
- 3)** Solutions to wicked problems can be only good or bad, not true or false. There is no idealized end state to arrive at, and so approaches to wicked problems should be tractable ways to improve a situation rather than solve it.
- 4)** There is no template to follow when tackling a wicked problem, although history may provide a guide. Teams that approach wicked problems must literally make things up as they go along.
- 5)** There is always more than one explanation for a wicked problem, with the appropriateness

of the explanation depending greatly on the individual perspective of the designer.

- 6)** Every wicked problem is a symptom of another problem. The interconnected quality of socio-economic political systems illustrates how, for example, a change in education will cause new behavior in nutrition.
- 7)** No mitigation strategy for a wicked problem has a definitive scientific test because humans invented wicked problems and science exists to understand natural phenomena.
- 8)** Offering a “solution” to a wicked problem frequently is a “one shot” design effort because a significant intervention changes the design space enough to minimize the ability for trial and error.
- 9)** Every wicked problem is unique.
- 10)** Designers attempting to address a wicked problem must be fully responsible for their actions.

As institutions and communities continue to understand the nature of the challenges we face this opens the possibility for education systems to evolve to prepare future learners and leaders to address these kinds of challenges and co-create viable visions of the future together even in the face of ‘wicked problems’<sup>75</sup>. Examples of this shift can be seen in the trend towards developing network-based ways of organising to address these challenges. Networks are emerging as collaborative and creative sources for innovation, as well as provide powerful scaling potential of innovation between multiple stakeholders. Lydia Dobyns, CEO of the [New Tech Network](#)<sup>76</sup>, and Tom Vander Ark, Founder of [Getting Smart](#)<sup>77</sup> have shown how approaching education and learning ultimately from a networked approach increases: 1) capacity building for educators, 2) innovation through bundling features and tools, 3) space and support to experiment, 4) expanded learning options for young people, and 5) overall school improvement as a consequence<sup>78</sup>.

<sup>71</sup> <https://www.ashoka.org/en-gb/home-page-keep-unpublished>

<sup>72</sup> <https://gloaled.gse.harvard.edu/home>

<sup>73</sup> <https://hundred.org/en#header>

<sup>74</sup> [https://www.wickedproblems.com/1\\_wicked\\_problems.php](https://www.wickedproblems.com/1_wicked_problems.php)

<sup>75</sup> [https://www.researchgate.net/publication/320866637\\_Wicked\\_problems\\_in\\_education\\_What\\_they\\_are\\_and\\_how\\_to\\_write\\_about\\_them](https://www.researchgate.net/publication/320866637_Wicked_problems_in_education_What_they_are_and_how_to_write_about_them)

As educational processes evolve, educators and learners alike are increasingly committed to building capacities to address wicked problems connecting learning to positive human development. There is recognition that introducing and teaching social/emotional skills, such as empathy or mindfulness is not a “one off” endeavor. Instead we need immersive, ongoing experiences, in various contexts, to practice and embody empathy or mindful action; ideally in authentic, social, and nature-based learning environments<sup>79</sup> across multiple contexts to truly understand what this means across a lifelong learning journey. This can be applied to all skills we need and want to develop. The very nature of what we require to thrive ultimately requires a new organisation of learning which is not and will not-by nature of these new competencies — continue to be only classroom based education. Below are a set of examples where we can see the “seeds” of the future of learning beginning to flourish across various domains of education and learning:



## A. Approaches for the Emerging Future:

This research suggests that outdated content, skill areas, and approaches to education need to evolve to suit an ever-changing world and that approaches and pedagogy must become future focused to prepare learners to navigate rapidly emerging and future realities. Furthermore, education systems are becoming less siloed, more porous, integrated with communities, and focused on being a source for addressing the grand challenges facing humanity. The shifting landscape of such things as lifelong learning, holistic approaches to learning, and valuing multi-cultural perspec-

tives and ways of generating knowledge and wisdom are all contributing to the evolution of education in conventional education systems. This then sets the stage for an array of ways in which learners, educators, and learning systems must evolve to support these shifts.

### **Evolving Skills.**

Changing contexts requires different skill sets, such as, ‘21st century’ skills, a combination ‘soft’ and ‘hard’ skills<sup>80</sup>. The term ‘soft skills’ developed to distinguish social/emotional intelligence, for example, from technical skills. Whilst the term “soft skills” is not perhaps ideal phrasing as it can to some imply ‘lesser’ importance than “hard skills”, identifying the difference between the two and increasingly valuing social/emotional intelligence has been an important step in evolving what and how we learn. Furthermore, as suggested in Global Education Futures report on Future Skills<sup>81</sup>, we can continue to evolve the way we develop an integral approach to skills development by using a four-layer skill model that includes the following levels:

- i. *context specific* (including, but not limited to, “hard” skills) skills are developed and applied in specific context, often using specific tools, e.g. surgery skills, bicycle riding, video blogging, or tango dancing. These skills constantly evolve to match technological and business transformations. Future Skills initiative of WorldSkills global movement prototypes workplaces and assessment standards for many of the emerging skills and job roles.
- ii. *cross-context skills* can be applied in a larger domain of social or personal activities, e.g. an ability to read & write, time-management or teamwork;
- iii. *meta skills* which are primarily different modes of operating objects in our mind or in the physical world, ranging from

<sup>76</sup> <https://newtechnetwork.org/>

<sup>77</sup> <https://www.gettingsmart.com/>

<sup>78</sup> <https://www.wiley.com/en-us/Better+Together%3A+How+to+Leverage+School+Networks+For+Smarter+Personalized+and+Project+Based+Learning-p-9781119439103>

<sup>79</sup> <https://rutamaestra.santillana.com.co/edicion-22/caminando-hacia-la-educacion-basada-en-la-naturaleza/>

<sup>80</sup> [http://stechnology.pbworks.com/f/Dede\\_%282010%29\\_Comparing%20Frameworks%20for%2021st%20Century%20Skills.pdf](http://stechnology.pbworks.com/f/Dede_%282010%29_Comparing%20Frameworks%20for%2021st%20Century%20Skills.pdf)

<sup>81</sup> [http://www.globaledufutures.org/images/people/WSdoklad\\_12\\_okt\\_eng-ilovepdf-compressed.pdf](http://www.globaledufutures.org/images/people/WSdoklad_12_okt_eng-ilovepdf-compressed.pdf)

<sup>81</sup> <https://www.exploringbytheseat.com/>

logical-mathematical to bodily-kinesthetic to interpersonal; and

- i v. *existential skills* that can be universally applied throughout lifetime and different living contexts on an individual.

Existential skills provide learners with the required skills for adaption and mastery. [Mutt-i-grees](#)<sup>82</sup> have, for example, created a social and emotional learning curriculum that teaches children essential skills for academic and life success by exploring the unique characteristics of shelter dogs. A series of lessons are designed to help children become resilient, identify their strengths, skills and talents and areas in which they can improve. The lessons are presented in five units: Achieving Awareness, Finding Feelings, Encouraging Empathy, Cultivating Cooperation, and Dealing with Decisions. Activities and readings focus on canine/human relationships, and some schools choose to establish partnerships with their local animal shelter to give the children first hand experience of subject matter and bring the lessons to life.

### **Sustainability and Systems Change in Education.**

In the face of increasingly complex challenges it is no longer adequate that our children and communities merely are informed about sustainability issues; in order to implement change we need to be actively learning in a way that prepares people to tackle the challenges we face. As such, developments in sustainability, systems change and action-based learning approaches in education are rapidly emerging. Through multi-stakeholder and community engaged practices children, teachers, community members, parents, local businesses, and government are coming together to evolve perceptions, understanding, and ultimately behaviours toward sustainability<sup>83</sup>. [Green Hope Foundation](#)<sup>84</sup> founded by Kehkashan Basu, a 12-year old activist, is a youth organisation working on Education for Sustainable Development, children's rights and environmental protection empowers young

people to build effective partnerships with all stakeholders of civil society. Another great example is [EcoClass\\*](#), an online platform that provides over 50,000 teachers of Russia with gamified lessons scenarios, inspirational video materials and out-of-school quests to develop learners' environmental awareness and engage them in hands-on local activism. The [Strategic Foresight and Innovation \(MDes\)](#)<sup>85</sup> program at OCAD University (Toronto, Canada) prepares designers to innovate toward societal impact. [Future Generations University](#)<sup>86</sup> and their Master of Arts in Applied Community Development program<sup>87</sup> develops capacities in students to affect local and global change. Furthermore, in 2018 at Yale School of Management diverse educational innovators came together to explore a broad spectrum of approaches and case studies [to systems change education in an innovation context](#)<sup>88</sup> identifying that the field of education is being forced to rapidly evolve to both remain relevant to 21st century learners and prepare society to address system-level challenges.

### **Facilitation and New Roles.**

With new types of curriculum and learning approaches, this spotlights the necessity of changing learning environments. Moving towards value-based, trust-based interactions, this requires teachers, leaders and other educational change makers to obtain new skills such as facilitation, moderation, group dynamics management and situational leadership. There are examples of schools using this methodology, such as [Big Picture Learning](#)<sup>89</sup> and [High Tech High](#)<sup>90</sup>, as well as programs such as The Weaving Lab who support the personal inner transformation and professional development of those looking to improve learning and education ecosystems worldwide. The role of

<sup>82</sup> <https://education.muttigrees.org/>

<sup>83</sup> <https://hundred.org/en/research> (Spotlight on Sustainability)

<sup>84</sup> <https://greenhopefoundation.wixsite.com/greenhope>

<sup>85</sup> <https://www.ocadu.ca/academics/graduate-studies/strategic-foresight-and-innovation>

<sup>86</sup> <https://www.future.edu/>

<sup>87</sup> <https://www.future.edu/masters-degree/>

<sup>88</sup> <http://systemschangeeducation.com/>

\* <http://xn--80ataenva3g.xn--p1ai/>

the educator acting as a skilled facilitator is also an emerging phenomenon spotted in the schools mentioned above and many more, as the pedagogical expertise shifts from content specific knowledge to human development and learning sciences<sup>91</sup>. This approach to teaching ultimately requires a new form of leadership and skills in facilitation so there is an emerging field of training and capacity building to support this shift, for example Stanford Design School co-developed [School Retool](#)<sup>92</sup> a professional development fellowship that helps school leaders redesign school culture through small, scrappy experiments called hacks, built on research-based practices intending to lead to deeper learning, to develop students for life in the real world. [Shadow a Student](#)<sup>93</sup> is an example of one of these small hacks which could lead to big changes where teachers go on a journey to bring educators together to empathize with their students and take new kinds of action at their school through their eyes.

### **Project-Based Pathways.**

A project has scope of work, resource, and planning activity to execute and manage resources to get the desired results. In the present world full of ever increasing complexity, project-based learning is preparing students to solve real world problems, promoted by many groups including Association of Supervisors and Curriculum Designers (ASCD)<sup>94</sup>. It's an approach to learning that focuses on gaining knowledge and skills by working for an extended period of time to investigate and respond to a question, problem or challenge through learning by doing and authentic experiences. As an increasingly popular approach to learning, the [Buck Institute for Education](#)<sup>95</sup> is a non-profit organization that creates, gathers, and shares high-quality project-based learning (PBL) instructional practices and products and provides highly effective services to teachers, schools, and districts." The site includes many free resources and tools, and supports a community of educators interested in PBL-related issues.



## **B. Justice and Equity:**

Many industrial and assembly line educational systems, created to prepare populations for factory work, still to this day serve an elite few, perpetuate systemic violence, and propel us further into unsustainable and unjust ways of living on our finite planet<sup>96</sup>. Contemporary social justice movements, such as, Black Lives Matter, Idle No More, Me Too, Arab Spring, and United Farm Workers, and social justice communities recognize the life-and-death need to understand, address and dismantle the many systemic, structural, institutional, interpersonal, and individual barriers to equity for historically marginalized/underrepresented/underresourced communities — in particular 2SLGBTQ+, BIPOC, poor & low-income, disabled, sex workers, immigrants of color, and folx from the Global South. Additionally, social justice work is dedicated to deconstructing oppressive structures of power and privilege over time through the dismantling of dominant culture institutions, the healing of historical trauma, and the building of ally or accomplice communities of resilience, practice and support.

Transformative justice work, rooted in “right action”, cultivates the conditions to prevent individual, collective, or systemic violence through measures such as creating safe space, reconciliation efforts, trauma healing, and accountability actions (ie: reparations)<sup>97</sup> Transformative justice asks of us to re-imagine our desired society, futures, and systems through a lens of just and lasting change. From this orientation, equity is not an acceptable

<sup>89</sup> <https://www.bigpicture.org/>

<sup>90</sup> <https://www.hightechhigh.org/>

<sup>91</sup> <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1744-6198.1999.tb00232.x>

<sup>92</sup> <https://schoolretool.org/>

<sup>93</sup> <https://www.shadowastudent.org/>

<sup>94</sup> <http://www.ascd.org/Default.aspx>

<sup>95</sup> <https://www.pblworks.org/>

afterthought in pedagogical frameworks for learning, but must be built into the DNA of learning, to catalyze the creation of new systems that truly serve all. As James Baldwin wrote in his 1963 article, “Talk to Teachers,”: “The paradox of education is precisely this: that as one begins to become conscious one begins to examine the society in which he is being educated. The purpose of education, finally, is to create in a person the ability to look at the world for himself, to make his own decisions. ...But no society is really anxious to have that kind of person around. What societies really, ideally, want is a citizenry which will simply obey the rules of society. If a society succeeds in this, that society is about to perish. The obligation of anyone who thinks of himself as responsible is to examine society and try to change it and to fight it - at no matter what risk. This is the only hope society has. This is the only way societies change.”<sup>98</sup>

Advancing this call for change, Paulo Freire also challenged us to see education as a participatory facilitated process working toward a more equitable and conscious humanity and society. To see that students are not bank accounts to be filled, and teachers not cogs in the wheel of dehumanized industrial and colonial schools [and systems] created for the purpose of perpetuating long-standing systems of oppression. But rather that both student and teacher were equal partners in the quest to becoming more human, with the goal of collective liberation, and education as the practice of freedom.<sup>99</sup>

<sup>96</sup> [https://books.google.ca/books?id=uBD\\_OoUk6osC&pg=PA28&source=gbs\\_toc\\_r&cad=3#v=onepage&q&f=false](https://books.google.ca/books?id=uBD_OoUk6osC&pg=PA28&source=gbs_toc_r&cad=3#v=onepage&q&f=false)

<sup>97</sup> <https://leavingevidence.wordpress.com/2019/01/09/transformativ-justice-a-brief-description/>

<sup>95</sup> <https://www.pblworks.org/>

<sup>96</sup> [https://books.google.ca/books?id=uBD\\_OoUk6osC&pg=PA28&source=gbs\\_toc\\_r&cad=3#v=onepage&q&f=false](https://books.google.ca/books?id=uBD_OoUk6osC&pg=PA28&source=gbs_toc_r&cad=3#v=onepage&q&f=false)

<sup>97</sup> <https://leavingevidence.wordpress.com/2019/01/09/transformativ-justice-a-brief-description/>

<sup>98</sup> <https://richgibson.com/talktoteachers.htm>

<sup>99</sup> [https://en.wikipedia.org/wiki/Pedagogy\\_of\\_the\\_Oppressed](https://en.wikipedia.org/wiki/Pedagogy_of_the_Oppressed)

<sup>100</sup> <https://www.heinemann.com/products/e09814.aspx>

<sup>101</sup> [https://decolonialfuturesnet.files.wordpress.com/2019/05/braiding\\_reader.pdf](https://decolonialfuturesnet.files.wordpress.com/2019/05/braiding_reader.pdf)

<sup>102</sup> <https://files.eric.ed.gov/fulltext/ED560121.pdf>

Educational systems, and systems in general, prioritizing ways of learning, productivity, and success from the desires of dominant culture leave out the possibilities of a more evolved and holistic representation of culture and learning that is inclusive and has liberation at its core. The creation and cultivation of learning ecosystems require us to learn and live in a just way — not because it’s the “right” thing to do — but because a learning ecosystem would not truly be holistic without the centering of social justice education. The “whole community change” approach<sup>100</sup> for example, asks us to look to indigenous ways of being and knowing that are new for dominant culture — moving from what Elwood Jimmy and Vanessa Andreotti call “Brick sensibilities” — goal and progress focused ways that feed into existing (colonial) structures — to “Thread sensibilities” which are oriented towards relationships and collective well being, creating new systems for the greater good of all people and the planet.<sup>101</sup>

We can take inspiration and guidance from the below evolving practices which are working to create equitable learning environments while working in the industrial world that was built on capitalist assumptions of productivity, which is inherently inaccessible.

At the same time, however, justice work requires a radical re—imagining, and deep inner reflection, to move to a place beyond tolerance, where all bodies, all ways of learning, and all lived experiences, are not only supported, but appreciated and valued as natural parts of the human experience<sup>102</sup> and unique reflections of the diversity of our world and shared future. We have an opportunity and responsibility to cultivate collective care which will radically alter how we design learning spaces, including such things as: encouraging play rather than unhealthy competition, redefining “productivity” and time management, reallocating resources (ie: school police or teacher salaries), decision making



roles, creating space for inner work (ie: social emotional learning), or evolving the purpose of education and learning to encompass the full spectrum of the human experience.

### **Inclusion, Diversity, Representation, and Beyond.**

Creating inclusive classrooms has multiple collective benefits over time for students, educators, and communities. Over thirty years of research on inclusive classrooms and learning environments shows that diverse students learning together, students with extensive needs and/or from diverse backgrounds and experiences, will achieve greater outcomes and create more meaningful social relationships.<sup>103</sup> The research corroborates that youth perform better in diverse classrooms with students and educators of diverse experiences and that diversity promotes creativity, collaboration, and has positive impacts on mental health and wellbeing.

Active inclusion necessitates proactive and collaborative policy and process to provide accessible resources, training, support, and capacity building for educational community members to ensure equity of access and opportunity for all to thrive. We can look to the disability justice movement and the Inclusive Classroom<sup>104</sup> movement for examples of the processes entire school boards or networks can put in place for active inclusion. IEPs (Individualized Education Plans) — ideally created in partnership with care-givers/parents — Co-teaching implementation and advanced technologies (also guided by Universal Design Learning<sup>105</sup>) are resourced to support assistive learning modalities and provide equitable support for all learners, and learning pathways that foster a more inclusive society at large.

Training in diversity, equity, and inclusion for educators and administration can also support countering implicit bias, and fostering a supportive, interdependent “ask for help” environment for educational professionals who may face real fear when asked to shift their paradigms to reflect new possibilities<sup>106</sup>.

Studies in childhood development show that students feel safer in school and in their communities when they are educated in non-siloed<sup>107</sup>, diverse settings as well as are more likely to promote diversity outside of school environments<sup>108</sup>. Diverse settings in this context can mean spaces that are intercultural and multicultural, multilingual, support rural and distance learning, and in general promote safety for all kinds of learners. Furthermore, diverse representation of those in positions of power/authority within the school itself (teachers — principals) tends to mean more professionals who are able to empathize and provide customized support more relevant to students’ lived experiences. This can translate into a higher likelihood of closing disparities such as the “Belief Gap”<sup>109</sup> present with minority students/communities. When youth are able to “see themselves” represented in educational leadership and learning content it increases relevance of education to their lives as well as increases the likelihood of fostering aspirations toward leadership positions in the future<sup>110</sup>.

Across education systems are many examples to highlight of people working for diversity and representation to support inclusion; One, Global Minds<sup>111</sup>, is a for-youth by-youth organization that inspires students to form social bonds, intercultural friendships, and to consider global issues through youth led extra-curricular activities. Comunidad Genera<sup>112</sup>, in

<sup>103</sup> <https://www.thinkinclusive.us/research-inclusive-education/>

<sup>104</sup> <https://www.understood.org/en/learning-thinking-differences/treatments-approaches/educational-strategies/4-benefits-of-inclusive-classrooms>

<sup>105</sup> <https://www.understood.org/en/learning-thinking-differences/treatments-approaches/educational-strategies/universal-design-for-learning-what-it-is-and-how-it-works>

<sup>106</sup> [https://books.google.ca/books?id=fhliAwAAQBAJ&pg=PT31&source=gbs\\_toc\\_r&cad=2#v=onepage&q&f=false](https://books.google.ca/books?id=fhliAwAAQBAJ&pg=PT31&source=gbs_toc_r&cad=2#v=onepage&q&f=false)

<sup>107</sup> <https://tash.org/>

<sup>108</sup> <https://unh.app.box.com/s/p7w3fnx69xghvrbtzejds9qbnhq164cd>

<sup>109</sup> <https://educationpost.org/conversation/blog/the-belief-gap/>

Chile, provides training in gender equality and sexual diversity to students, parents, teachers and staff of educational communities through seven minute videos. It also provides teaching and family activities with gender perspective explained through one minute videos that promote gender equality and LGBTQIA+ rights. Or we can look at Disability Rights, Education, Activism, and Mentoring (DREAM)<sup>113</sup>, a national online disability cultural center connecting and supporting students to become leaders and agents of change on their campuses. The student-led organization strives to empower students with disabilities to work for campus and national change, encourage the development of disability culture and peer support, and advance the study of disabilities within academia. Additionally, youth themselves are increasingly part of research and development shaping education. The Every Child to Flourish report, for example, includes insights from over 400 young people in 19 different countries world-wide on what they believe needs to improve in education, their insights feed into innovations selected to be promoted around the world<sup>114</sup>. *Voice of Youth\** initiative has engaged thousands of children & young people in decision making on school curriculum, city planning, and national policy making, and also trained hundreds of teachers in practices of youth empowering conversations. Research on the future of learning can be co-authored by young people as well, for example — a Whole Systems Approach to Education Redesign highlighted a case study on the need for inter-generational perspectives and inclusion and was published by a 17 year old exploring the future of education in a cross-cultural context.<sup>115</sup>

### **No Singular Education System/School.**

There is no “one size fits all” approach to education for all cultures and people when it comes to educational systems and learning support structures. Our educational systems

must and are evolving to reflect diversity of context, place, learning styles, and be adaptable to the learning needs of all. For example, Agile Learning Centres<sup>116</sup>, an expanding network of intentional learning communities leveraging agile tools to support Self-Directed Education, or unschooling and homeschooling communities like The Learning Co-operative<sup>117</sup>, a parent run, alternative primary school situated on beautiful bushland close to Hurstbridge, Victoria. We see education clubs and open awareness-building initiatives like live libraries<sup>118</sup> and flying universities to name a few<sup>119</sup>. All of which exemplify new learning landscapes and provide alternative approaches making it possible to choose from a wider range of options suited to diverse learning styles.

### **Intersectional Learning.**

Intersectional theory, first coined by Kimberlé Crenshaw<sup>120</sup>, elucidates how people can be disadvantaged by multiple sources of oppression and/or be both oppressed and oppressive themselves. Additionally, systems of violence and inequity are also interconnected. Ableism, for example, is related to and often perpetuates capitalism, colonialism, white supremacy, and gender-based violence. In order to address oppressive systems dynamics an intersectional understanding of how issues interrelate is necessary for long term solutions to be implemented.

Intersectional justice work provides, and necessitates, an informed framework to create holistic change. For systems, processes, policies, institutions, and relationships to become more just and equal for all it is imper-

<sup>110</sup><https://www.edweek.org/tm/articles/2017/03/29/wheres-my-story-reflecting-all-students-in.html>

<sup>111</sup><http://globalminds.world/>

<sup>112</sup><http://generafundacion.org/>

<sup>113</sup><https://www.dreamcollegedisability.org/>

<sup>114</sup>[https://hundred-cdn.s3.amazonaws.com/uploads/report/file/1/Hundred\\_Research\\_Report\\_001\\_-\\_Every\\_Child\\_to\\_Flourish.pdf](https://hundred-cdn.s3.amazonaws.com/uploads/report/file/1/Hundred_Research_Report_001_-_Every_Child_to_Flourish.pdf)

<sup>115</sup><https://www.dropbox.com/s/00wg4c77btihfa2/KLaszlo%20-%20EdFuture-paper.pdf?dl=0>

<sup>116</sup><https://agilelearningcenters.org/>

<sup>117</sup><http://www.hurstbridgelearningcoop.vic.edu.au/>

<sup>118</sup><http://voiceofyouth.me/>

ative that we foster holistic approaches that value all bodies, beings, and identities as essential<sup>121</sup>. Disability justice frameworks can guide approaches to intersectional learning for communities and allies. This approach requires holding both a meta perspective and a deeply internal awareness. Intersectional justice focuses on areas such as: a) self-determination and values, b) collaboration with allied communities and power sharing, c) cultivating pride and identity awareness through celebration, d) documenting history (all histories) and culture, e) the understanding of power (earned and unearned power; or, the hierarchy of power within oppressed groups) and positionality, f) care and accountability as an act of love<sup>122</sup>, and g) taking action on acute issues while also striving not to repeat mistakes of the past or perpetuated systems of oppression<sup>123</sup>.



### C. Technology & Digitalization:

With the rise in technology there has been a burst of edtech 'solutions' developed across learning and education<sup>124</sup>, and whilst many have not have the revolutionary potential of deepening human connections as of yet, there is a rising surge in opportunity with technology presenting many new possibilities.

#### **Knowledge at our Fingertips.**

The development of digital technologies has led to a mass migration of knowledge from the special and localised, usually situated within very specific hubs, to an ever increasingly distributed model via the internet. The distribution shows itself in various forms, from online libraries, games and structured learning

environments. The emergence of online newspapers and encyclopedias, webinars and courses have made acquisition of knowledge accessible to many at any time and place, creating brand new combinations of learning in any preferred order. [Exploring by the Seat of Your Pants](#)<sup>125</sup>, for example, brings science, exploration, adventure and conservation into classrooms through free virtual speakers and field trips. This is a big step away from what seemed possible before, with artificially aligned and institutionalised curriculums. With the growth of opportunities, such as virtual classes and laboratories, as well as online learning advisors, technology has enabled different access and practical learning processes which can be accessed at all ages.

#### **Personalized Educational Technology.**

There have been an increasing emergence in technological possibilities in education explored, such as Indonesian-based [Octagon Studio](#)<sup>126</sup> which provides educators with easy and inexpensive augmented reality technology through 4D flashcards. Each card contains a combination of images and information exploring different subjects, including animals, space, dinosaurs and human anatomy. Schools can also use the cards as a language learning tool by utilising the multilingual feature, with fun and engaging lesson plans on how to integrate this technology into learning. Then, and opposite approach where the entire basis of the child's education is created on personalised technological platforms, you have examples such as [Century Tech](#)<sup>127</sup>. When technologies are applied well, it can allow for an intentional opportunity for revolutionizing learning models through flexible, practical, learner-oriented experiences.

<sup>118</sup> <https://www.coe.int/en/web/youth/living-library>

<sup>119</sup> [https://en.wikipedia.org/wiki/Flying\\_University](https://en.wikipedia.org/wiki/Flying_University)

<sup>120</sup> [https://edisciplinas.usp.br/pluginfile.php/1741149/mod\\_resource/content/1/CHO%2C%20S.%3B%20CRENSHAW%2C%20K.W.%3B%20Mccall%2C%20L.%20Toward%20a%20Field%20of%20Intersectionality%20Studies.pdf](https://edisciplinas.usp.br/pluginfile.php/1741149/mod_resource/content/1/CHO%2C%20S.%3B%20CRENSHAW%2C%20K.W.%3B%20Mccall%2C%20L.%20Toward%20a%20Field%20of%20Intersectionality%20Studies.pdf)

<sup>121</sup> <https://www.goodreads.com/book/show/38402046-care-work>

<sup>122</sup> <https://www.instagram.com/p/B9HWOn8DKBG/>

<sup>123</sup> <https://swiftschools.org/talk/understanding-intersectionality-critical-advancing-educational-equity-all>

<sup>124</sup> <https://www.financedigest.com/global-report-predicts-edtech-spend-to-reach-252bn-by-2020.htm>



## D. Rise of Learner Centered Education:

Presently, the process of education can metaphorically be framed as a “rocket” model. The educational system creates a “launch pad” for an individual throughout school and university years, and “shoots” an individual into professional life, after which individuals “land” into retirement a few decades later. With the increased longevity, higher levels of unpredictability of the future, and longer learning cycles, this model becomes obsolete. Learners themselves need to be able to understand how they learn, so they are able to be adaptive in the unlearning and relearning processes throughout life and have fun doing it!

### Self-Guided Lifelong Learning.

A self-guided learner is one able to set goals, define pace and needs, attract and create necessary learning resources, and immerse oneself into a variety of learning experiences, that holistically develop integral capacities and aspects of one’s personality across the learning lifecycle. It is a shift towards self-determined learning, shifting from knowledge hoarding to knowledge sharing<sup>128</sup>. In the [Democratic School of Hadera](#)<sup>129</sup> a highly successful school which has catalysed into an International Democratic Education movement over the last 25 years where Israeli children design and lead their own curriculum. Other examples of early application of this principle can be seen in the [Reggio Emilia](#)<sup>130</sup> network

that advocates that the main purpose of early education is the self-discovery of ways to express oneself. [Tubelski School of Self-Determination](#)\* in Moscow has designed a number of learning innovations to instigate young people’s self-guidance ability, such as physical exercises that help embody personal decision-making strategies in uncertainty from the very young age. In relation to adult learning opportunities, Copenhagen based [Kaos Pilots](#)<sup>131</sup> is a highly innovative blend of a design school and a business school, where learners seek to solve world problems through entrepreneurial and consulting projects they make and learn methodologies and frameworks throughout.

### Holistic Whole Person.

In many classrooms around the world today children are being taught how to pass exams, with a focus on content and memorisation alluding the opportunity to develop holistically. Holistic education is a philosophy of education based on the premise that each person finds identity, meaning, and purpose in life through connections to the community, to the natural world, and to humanitarian values such as compassion and peace. Holistic education aims to call forth from people an intrinsic reverence for life and a passionate love of learning. An example from the systemic level would be the [The International Soul of Education Initiative](#)<sup>132</sup>, who connect educational scientists, activists and experts to redefine, envision and re-design education from the inside out. It is also an inquiry into how to bring more wholeness, wisdom, heart, and human-beingness into all levels of education. The [Forest School movement](#)<sup>133</sup> is also deeply linked to developing holistic education experiences, through regular, hands on learning experiences in a woodland style natural environment.

### Joy and Play.

With information overload and a rise in work being inextricably linked within the way we design our personal life alongside the sophisticated development of the entertainment

<sup>125</sup> <https://www.exploringbytheseat.com/>

<sup>126</sup> <https://octagon.studio/>

<sup>127</sup> <https://www.century.tech/>

<sup>128</sup> [https://books.google.co.uk/books?hl=en&lr=&id=RRwxDfRc894C&oi=fnd&pg=PA75&dq=Bill+Ford+\(1997\)+heutagogy&ots=BXlq9DIqP-F&sig=tFzti-EXHpSkwYIUbo0cbXMIhm0#v=onepage&q=Bill%20Ford%20\(1997\)%20heutagogy&f=false](https://books.google.co.uk/books?hl=en&lr=&id=RRwxDfRc894C&oi=fnd&pg=PA75&dq=Bill+Ford+(1997)+heutagogy&ots=BXlq9DIqP-F&sig=tFzti-EXHpSkwYIUbo0cbXMIhm0#v=onepage&q=Bill%20Ford%20(1997)%20heutagogy&f=false)

<sup>129</sup> [http://www.democratics.org.il/site/index.asp?depart\\_id=125189&lat=en](http://www.democratics.org.il/site/index.asp?depart_id=125189&lat=en)

<sup>130</sup> <https://www.reggiochildren.it/identita/reggio-emilia-approach/?lang=en>  
\* [https://en.wikipedia.org/wiki/Alexander\\_Tubelsky](https://en.wikipedia.org/wiki/Alexander_Tubelsky)

industry, we increasingly recognise gaming and play as a close-to-life, inspiring and soothing way to get something new. This has fueled a rise of interactive forms of educational practices, including debates, quests, scientific shows and roleplay games. Unlike gamification which only adds elements of the game to existing schooling process to make it more fun — playification revolves around learning experience and makes it play-centered. Play (as modelling) is, on the one hand, a natural way of gaining knowledge by imitating real life processes, and on the other hand, a powerful instrument of delivery in social scenarios. This approach is being advocated for by many, including the [Lego Foundation](#)<sup>134</sup>, who dedicate a significant amount of time to cultivating this aspect of learning. Humanitarian Play Labs also bring [BRAC's](#)<sup>135</sup> signature low cost, high quality play-based learning model to the humanitarian context of the largest refugee settlement in the world in Cox's Bazar, Bangladesh. They integrate playful learning with child protection, psychosocial support, and linkages to critical services; incorporate relevant cultural traditions; and engage both Rohingya and host communities. It's unsurprising to discover then that play as an experience enables learning to be both effective and an increasing amount of research has shown to be a natural and safe approach developing creativity, imagination and more<sup>136-137</sup>. It's also crucial that our learning environments for play include access and integration with the outdoors, Outdoor Classroom Day is a chance for teachers and children to experience this and is a step towards showing how the outdoor environment could be used more frequently and intentionally for learning of all ages.



## E. Cultivation of the Collective:

Collective learning is the ability to share information so efficiently that the ideas of individuals can be stored within the collective memory of communities, accumulate through generations, and enable us to make new breakthroughs in development and connection to ourselves, each other and the planet as we are all interconnected. Yet, this will require well-designed and well-tended community knowledge gardens. Not only this but we are social beings and an individual's social abilities are based upon the quality of his or her social interactions. In order to have positive social interactions, an individual needs to be socially competent and have strong social learning skills, which can be learnt through collective learning. It's important to note, that as we ultimately are groups of diverse beings the collective is by no means one shared model but many approaches with different emergent theories of change and individual approaches which add their value to the whole ecosystem.

### Collective Learning Processes and Journeys

can generate and maintain meaningful collective purposes, identities, and actions that stimulate co-creation, collaboration and collective learning. Enabling people to collectively explore, co-create and co-evolve across disciplines in interesting and stimulating ways allows us to experience “belonging to something bigger.” There has been a rise in projects that connect learners to wider processes to create with a product or process collectively for the benefit of that community, traditionally called a “minga” in Ecuadorian Quechua<sup>139</sup> culture. Many indigenous communities, for example, used collaborative learning as a dominant form of learning, whereby mothers, fathers, and their children, or members of the tribe at any

<sup>131</sup> [https://www.kaospilot.dk/?gclid=EAlaIQobChMI9sGI5fCg5QIViK3tCh-29HwLqEAAAYASAAEgLvFPD\\_BwE](https://www.kaospilot.dk/?gclid=EAlaIQobChMI9sGI5fCg5QIViK3tCh-29HwLqEAAAYASAAEgLvFPD_BwE)

<sup>132</sup> <http://soul-of-education.org/>

<sup>133</sup> <http://soul-of-education.org/>

<sup>134</sup> <https://www.legofoundation.com/en/why-play/>

<sup>135</sup> <http://www.brac.net>

<sup>136</sup> [https://www.researchgate.net/profile/Randy\\_White/publication/267374472\\_Children's\\_Outdoor\\_Play\\_Learning\\_Environments\\_Returning\\_to\\_Nature/links/545141ec0cf2bf864cba8f55.pdf](https://www.researchgate.net/profile/Randy_White/publication/267374472_Children's_Outdoor_Play_Learning_Environments_Returning_to_Nature/links/545141ec0cf2bf864cba8f55.pdf)

<sup>137</sup> <https://clutejournals.com/index.php/TLC/article/view/1871>

<sup>138</sup> <https://clutejournals.com/index.php/TLC/article/view/1871>

<sup>139</sup> <https://firstnationspedagogy.com/>

age, would collectively get involved in problem-solving and tale-living<sup>139</sup>. This is a learning for new tribal members as well as for a tribe as a whole. In particular, many accounts of such learning have been recently documented for Mayan tribal communities in Guatemala but there is evidence of similar patterns of learning from indigenous communities in Africa, Latin America, South East Asia, and Oceania. New Zealand has made a considerable effort in adopting Maori tribal learning models and mashing them up with European curriculum and pedagogies, to create schools that employ indigenous collective learning practices for 21st century education<sup>140</sup>. Other collective learning processes, for example, include collaborative inquiry and communities of practice as developed by [Forum for the Future](#) in their [School for Systems Change](#)<sup>141</sup> who are growing a global community of change agents as our best chance to accelerate a transition to a sustainable future.<sup>142 143</sup> The Russian Foresight Movement launched in 2012 has brought together thousands of business, government, and social leaders and catalysts who collectively learn to “work with future” and cultivate local communities of change. Their work is supported by massive annual “future labs” such as the [Foresight Fleet\\*](#) and the [University 20.35 Island\\*\\*](#), as well as by the network of [Boiling Points\\*\\*\\*](#), “future co-creation spaces” that host these communities. Then there are collective learning art projects for local communities, such as [Earth Painting](#)<sup>144</sup>, This is a practice from Italy created to connect play and joy to environmental education in response to the urgency of bringing people closer to nature by encouraging the exploration of new inter-

active links with the Living. It is a community practice that takes place in an intergenerational circle and provides experiences ranging from organic Earth Paintings to Land Art. Tapping into the power of beauty and wonder allows young people to acquire new essential tools to emotionally navigate the waves of this challenging historical moment. This leads to a more holistic and ecosophical view of the world, connecting to ancestral wisdom in a contemporary way.

### **Peer-to-Peer.**

When students have an opportunity to learn together it develops their collaboration and organisational skills, as well as deepening their opportunity to learn. Venezuela and Chile based organisation [Trix and Trax](#)<sup>145</sup> help students discover and develop their passions and skills through arts, music, dance, sports and peer learning. A combination of values, live events, superheroes and technology use recorded performances and a social media platform for connection. The program works to transform tacit knowledge of these “Super Heroes” (peers with particular expertise in their passion) into a step by step practical learning methodology to enable them to share and allow others to discover their passions.

### **Networks for Learning.**

It seems that current pressures have created the ideal conditions for the rise of a “new” network-based education which provides more relevant content and learning experiences by involving a variety of new providers. This weaves learners and providers into a web of interconnected learning spaces and processes, creating flows of information that allow such systems to become increasingly flexible and adaptive, while at the same time becoming increasingly global. It is now possible to choose freely not only from where to learn, but also from whom to learn, and become a valid distributor of ideas, knowledge and lifestyle. Though this trend is only at a starting point now, we can confidently predict its growth, which makes a powerful shift from education technologies as a privilege

<sup>140</sup> [https://www.jstor.org/stable/3651309?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/3651309?seq=1#page_scan_tab_contents)

<sup>141</sup> [https://www.jstor.org/stable/3651309?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/3651309?seq=1#page_scan_tab_contents)

<sup>142</sup> <https://www.forumforthefuture.org/>

<sup>143</sup> <https://systemic-design.net/wp-content/uploads/2017/12/The-School-of-System-Change-as-a-system-change-endeavour-RSD6-paper.pdf>

<sup>144</sup> <https://systemic-design.net/wp-content/uploads/2017/12/The-School-of-System-Change-as-a-system-change-endeavour-RSD6-paper.pdf>

<sup>145</sup> <https://www.trixandtrax.com/>

\* <https://www.iaf-world.org/site/award-winner/foresight-fleets-saint-petersburg-2017-2018>

\*\* <https://ostrov.2035.university/>

\*\*\* <https://leader-id.ru/points/>

of a narrow professional strata to education technologies as an expression of one's sincere will to share knowledge. It is also perhaps the most powerful in that it allows people to take this process firmly offline and integrated within the local community. Ecosystem leader, Joshua Schachter, has developed CommunityShare<sup>146</sup> which transforms cities into human libraries through an online platform and offline relationships that connect local community expertise and knowledge to real-world learning experiences with students and teachers. Russian ecosystemic initiatives *Metaversum\** and *Broadband Learning Institute\*\** design platforms to establish and maintain local networks for learning, as well as train "learning navigators"<sup>\*\*\*</sup>, professionals who design and facilitate learning journeys for individuals, communities, and projects.

### Generative conversations.

There are a wave of initiatives centered on creating connective intelligence to foster collective intelligence through conversation methodologies. These are particularly important at a time where deep reimagination is required for our emergent future<sup>147</sup>. These allow spaces for rich and meaningful dialogue, sharing of frustrations, as well as ideation and connection with like minded individuals to support each other in shaping the future of learning and many other aspects which are inextricably linked to our thrivable futures. The following

are communities exploring and shaping the future in connection to other global initiatives. There is Ben Roberts of the Thriving Resilient Communities Collaboratory (TRCC) with *Now What*<sup>148</sup>. Jon Ramer and Somer Joy Ramer's SINE initiative with their trademark Jon & Somer Ramer's *SINE Waves*<sup>149</sup> facebook group you can join (Synergized Impact Network Exchange). John Kelden's *Conversation Community*<sup>150</sup>, Ben Bowler and the *World Weavers initiative*<sup>151</sup>, Sam Hahn's *Collaborology initiative*<sup>152</sup>, *Ashoka Changemakers*<sup>153</sup>, June Holley's *Network Weaver community*<sup>154</sup> and Anneloes Smitsman's, *Tipping Point Festival*<sup>155</sup> and Dmitry Shamenkov's *Open Dialogue School*<sup>\*\*\*\*</sup>. The leading community of practice that brings this initiatives together is *Art of Hosting*<sup>\*\*\*\*\*</sup>, an international movement of generative conversation hosts. Much of their work is not limited to generative conversation, with many of these individuals and educators exploring and offering support and collaboration through research, events, strategy development and more. Yet they all recognise the power of conversation and connection, using formats such as the *World Café*<sup>156</sup> and *Open Space*.

### Global Connections.

Global education involves learning about those problems and issues that cut across national boundaries, and about the interconnectedness of systems: ecological, cultural, economic, political and technological. Global education involves perspective taking, seeing things through the eyes of others. The *Global Oneness Project*<sup>157</sup>, for example, brings the world's global cultures alive in the classroom. They provide award-winning films and photo essays which explore cultural, social, and environmental issues and accompanying lesson plans using stories as a pedagogical tool to inspire growing minds, all for free. *THINK Global School*<sup>158</sup> is another example, a travelling high school where students live and learn in four countries a year, making unforgettable connections between their education and the world around them. At the wider school network level, there are *United World Colleges*<sup>159</sup>.

<sup>146</sup> <https://www.communityshare.us/>

<sup>147</sup> <https://www.akpress.org/emergentstrategy.html>

<sup>148</sup> <https://www.nowwhat2019.com/>

<sup>149</sup> <https://www.facebook.com/sinemembers/>

<sup>150</sup> <https://www.facebook.com/groups/conversationthatmindandmatter/>

<sup>151</sup> <https://worldweavers.com/>

<sup>152</sup> <https://www.facebook.com/groups/GlobalChallengesCollaboration>

<sup>153</sup> <https://www.facebook.com/ashokaschangemakers/>

<sup>154</sup> <https://networkweaver.com/>

<sup>155</sup> <https://www.earthwisecentre.org/tpf#section-1570452542572>

<sup>156</sup> <http://www.theworldcafe.com/key-concepts-resources/world-cafe-method/>

<sup>157</sup> <https://www.globalonenessproject.org/>

<sup>158</sup> <https://thinkglobalschool.org/>

\* <https://metaversum.ru/>

\*\* <http://humanworld.info/ru-RU/Users/119>

\*\*\* <http://learningfuture.ru/navigators>



## F. Evolving assessment:

Evaluation and assessment systems of the past may not be best suited for guiding people toward desired combinations of skills for the 21st century. We need to acknowledge the limitations of assessment and redirect the impact on people's life, especially for young people so that evaluation and assessment can be experienced as valuable and encouraging feedback.

While knowledge-based assessment of cognitive abilities such as reading, writing, arithmetic, memorization of facts and dates, and/or template-based problem solving are tangibly understood by conventional assessment and evaluation through standardized and automated testing, many of the most increasingly demanded skills in the 21st century are less tangible and therefore more challenging to access with traditional methods. Social and emotional intelligence, creativity, and our abilities to cooperate and co-create as well as other critical skills of the future must therefore be included in how we define learner's successes throughout the cycle of life-long learning. We need to accept the challenge of measuring these abilities as metrics of "academic success", and measure them in new and dynamic ways, as "creative profiles" describing range of multi-modal abilities. Most essential, we should also assess people in ways that do not destroy

<sup>159</sup> <https://www.uwc.org/>

<sup>160</sup> <https://mastery.org/>

<sup>161</sup> <https://web.seesaw.me/>

<sup>162</sup> <https://tc.vic.edu.au/>

<sup>163</sup> <https://www.smh.com.au/national/there-is-a-better-way-of-teaching-bored-australian-students-20181030-p50csj.html>

<sup>164</sup> <https://www.pearson.com/content/dam/one-dot-com/one-dot-com/global/Files/about-pearson/innovation/open-ideas/Preparing-foraRenaissanceinAssessment.pdf>

<sup>165</sup> <https://www.palgrave.com/gp/book/9783319595801>

<sup>166</sup> [https://books.google.co.uk/books/about/Emergent\\_Strategy.html?id=JBwwDwAAQBAJ&source=kp\\_book\\_description&redir\\_esc=y](https://books.google.co.uk/books/about/Emergent_Strategy.html?id=JBwwDwAAQBAJ&source=kp_book_description&redir_esc=y)

<sup>167</sup> <https://alternativecamden.com/>

\*\*\*\* <https://opendialogue.space/b>

\*\*\*\*\* <https://www.artofhosting.org/>

curiosity, creativity, and cooperation — and that allow people to learn by making mistakes. At the systemic level Mastery Transcript brings schools into a consortium to participate in debate and consider adopting a Mastery Transcript once it is piloted and launched. The [Mastery Transcript](#)<sup>160</sup> aims to be substantively different from the traditional model of assessment. It is organized around performance areas (rather than academic departments), mastery standards and micro-credits (rather than grades). Each micro-credit applied to a transcript signifies complete mastery of a specific skill, knowledge block or habit of mind as defined by the crediting high school. There is also a rise in tech platforms such as [SeeSaw](#)<sup>161</sup> who have developed portfolios which also have formative insights and family communication integrated. These kind of platforms allow for much deeper individualisation, so you could post videos, written content, illustrations etc. to show your learning. [Templestowe College](#)<sup>162</sup> are putting this into practice at the whole school level, partnered with local universities who allow for their students to express their learning in the best way they see fit. This has encouraged mastery with students developing impressive real-world projects, ones that could not leave partner universities questioning their competency to learn<sup>163</sup>. Other recent developments in assessment include: automated marking, flexible degrees and paying only to do the assessment vs. the entire course.<sup>164</sup>



## G. Servant and Shared Governance and Leadership.

Major shifts occur in the management of education systems, whereby national and local governments and other major stakeholders recognize the increased variety of learner types and needs, and learning models to support them. Addressing the area of shared leadership is explored deeply by authors such as Neha



Chatwani who embraces the underlying idea that leadership is a dynamic process that intersects closely with followership exploring more inclusive and holistic paradigms.<sup>165</sup> There is also the work of Adrienne Maree Brown, who, in a profound combination of radical self-help, society-help, and planet-help, mirrors and playfully explores that we need Emergent Strategy to enable us all to play a role in embodying and prototyping the future together.<sup>166</sup>

Accordingly, new types of governance emerge in education including:

- (1) Transition from hierarchy to “networked” governance, implying that development of education occurs not by centralized top-down promoting of new “educational reforms”, but by cultivating suitable approaches bottom-up.
- (2) Design of new tools that support this bottom-up development: “scanning” and “pulling” educational innovation competitions and acceleration programs, grants provided to schools and teachers, maps and professional networks of innovators. Creating incentives and promotions for innovators.
- (3) Cultivation of communities of practice for new education paradigm practitioners that can creatively search for opportunities for design and implementation of innovations (having sufficient time and resources to reflect, discuss, and experiment)
- (4) Taking into consideration the diversity of situation of various regions and schools (economy, resource availability etc.).
- (5) Using education as a key vehicle for socio-economic development at the regional and national scale.
- (6) Changing role of governments that become facilitators of “fair game” opportunities and equity while maintaining growth of diversity.

An example of grassroots civic governance and community acceleration initiative, [Alternative Camden](#)<sup>167</sup> in London are exploring new ways to invest in public good and social progress. They started alt.cmd, co-founded by Camden Town Unlimited, Euston Town, Dark Matter Labs & Future Cities Catapult as a collective investment to explore how to create the ecosystem for local innovation and imagination together, running collective local experiments with the community. They are working on accelerating regulation, the economy, the environment, education, AI and privacy.

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While there are many positive trends within education systems including the above it is also clear that if education systems are to evolve to prepare learners to navigate our increasingly VUCA future and address the “wicked problems” facing our world, they must become a source for building our individual and collective capacities to do so together. Whilst many of the examples above point to “bright spots” of learning and innovation in education we need to connect and foster collaboration between these actors so that we don’t foster disconnected islands of innovation. What is needed, this research suggests, is to cultivate the collaborative ecosystems within these innovative approaches are developed both locally and globally. Given the depth and scale of challenges we face, we need sustainable and regenerative approaches to learning and innovation that address the many facets of “wicked problems” and holistic education that prepares learners to work and play toward viable futures<sup>168</sup>.

“We’re teaching people to look for a right answer but those out in the world, out in the field know that it is never so simple. Our current education is conditioning yourself to think in a linear way and wiping out the complexity, our reality”



**Garry Jacobs,**  
CEO of the World Academy of  
Arts and Science

<sup>168</sup> [https://hundred-cdn.s3.amazonaws.com/uploads/report/file/1/Hundred\\_Research\\_Report\\_001\\_-\\_Every\\_Child\\_to\\_Flourish.pdf](https://hundred-cdn.s3.amazonaws.com/uploads/report/file/1/Hundred_Research_Report_001_-_Every_Child_to_Flourish.pdf)

# 1.3

## Why Ecosystemic Transitions

At this time in our history, humanity is facing two incredibly profound questions at a global scale. Firstly, how do we establish deep resilience as a global civilization in the midst of accelerating and increasing complexity? Secondly, how do we harmonize the relationship between humanity and other planetary systems, such as the climate systems of land, air, and water?<sup>169</sup> While industrial-based society has solved many social challenges it has also produced many negative eco/social/economic/cultural consequences. In the midst of increasing complexity of our local and global challenges and the intersectional nature of the dynamics we face is forcing us to address questions across societal domains about how we as a human community will learn, make choices, and lead together going forward.

The work of Yaneer Bar-Yam explored the models of governance and control structures throughout the entire human history<sup>170</sup>. He indicated that as the complexity of diversity across human societies grew, hierarchical models of governance in complexity and efficiency would reach their peak in the second half of the 20th century, yet after that their efficiency would begin to decline (see Figure 2). Too many levels of hierarchy, with too few decision makers at the top, does not allow

governance to comprehend the complex situation in its entirety. These models then give way to hybrid decision making structures that are more interconnected, where hierarchies are combined with networks.

According to the requisite variety law established by William Ross Ashby<sup>172</sup> the variety (or complexity) of a governing system must be the same or greater than systems they govern. Therefore, as interconnected global societies continue to create new layers of technological and social complexity, we should see new systems of governance that can “absorb” complexity. An emerging complex network-based civilization requires new systems of governance that are adequately complex, and so it must be governed by a network in which everyone is a node in the net. This requires that every individual and collective agent both coordinates and is coordinated. As it is estimated there is probability of around 50% that human civilization collapsing before the end of the 21st century<sup>173</sup>, and the possibility of humankind disappearing altogether is between 20% and 30%<sup>174</sup>, this is something we need to begin to learn and implement presently. The cumulative nature of global risks has been widely discussed in Nassim Taleb’s *Antifragile*, where he suggests that it is not possible to prevent the accumulation of global risks within the increasingly complex society by creating better systems of command and control<sup>175</sup>, reinforcing Ashby’s work. Instead he suggests that the best way to ensure global civilization is crush-prone or “antifragile” is to create the capacity to absorb risks at source: at the level of personal action. In other words, it requires every citizen of the global world to take care

<sup>169</sup> [https://www.researchgate.net/publication/319684481\\_Systemic\\_Innovation\\_Education\\_and\\_the\\_Social\\_Impact\\_of\\_the\\_Systems\\_Sciences](https://www.researchgate.net/publication/319684481_Systemic_Innovation_Education_and_the_Social_Impact_of_the_Systems_Sciences)

<sup>170</sup> <https://dl.acm.org/citation.cfm?id=331688>

<sup>171</sup> <https://dl.acm.org/citation.cfm?id=331688>

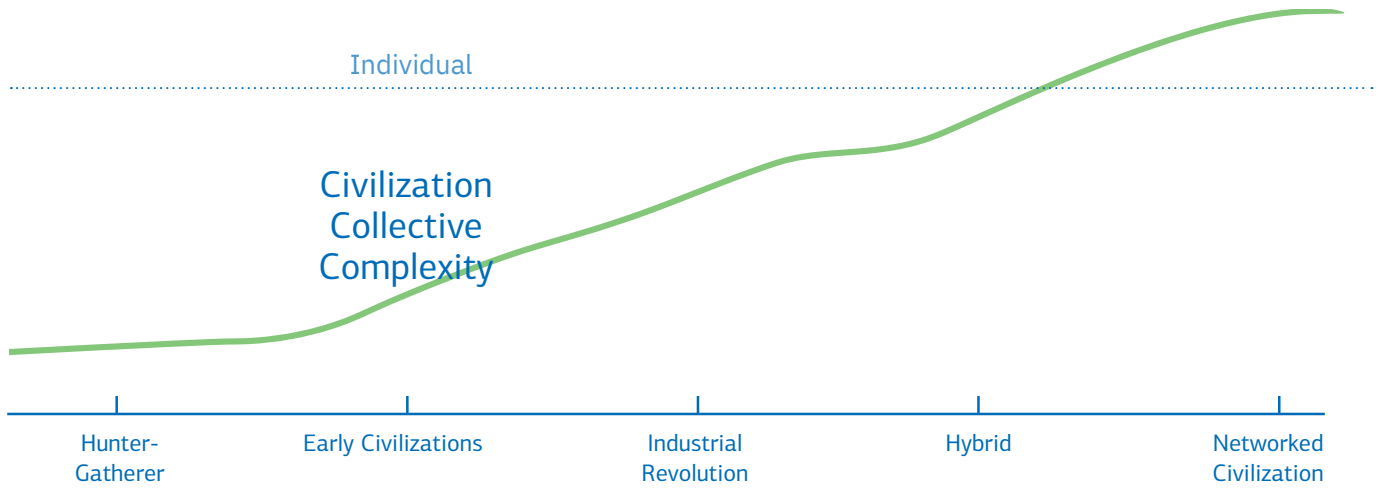
<sup>172</sup> [https://books.google.co.uk/books/about/An\\_Introduction\\_to\\_Cybernetics.html?id=mHtQAAAAMAAJ&source=kp\\_book\\_description&redir\\_esc=y](https://books.google.co.uk/books/about/An_Introduction_to_Cybernetics.html?id=mHtQAAAAMAAJ&source=kp_book_description&redir_esc=y)

<sup>173</sup> [http://www.tecnos.cienciassociais.ufg.br/up/410/o/Our\\_Final\\_Hour\\_%E2%80%93\\_A\\_Scientist's\\_Warning\\_-\\_2003\\_-\\_Martin\\_Rees\\_c%3%B3pia.pdf](http://www.tecnos.cienciassociais.ufg.br/up/410/o/Our_Final_Hour_%E2%80%93_A_Scientist's_Warning_-_2003_-_Martin_Rees_c%3%B3pia.pdf)

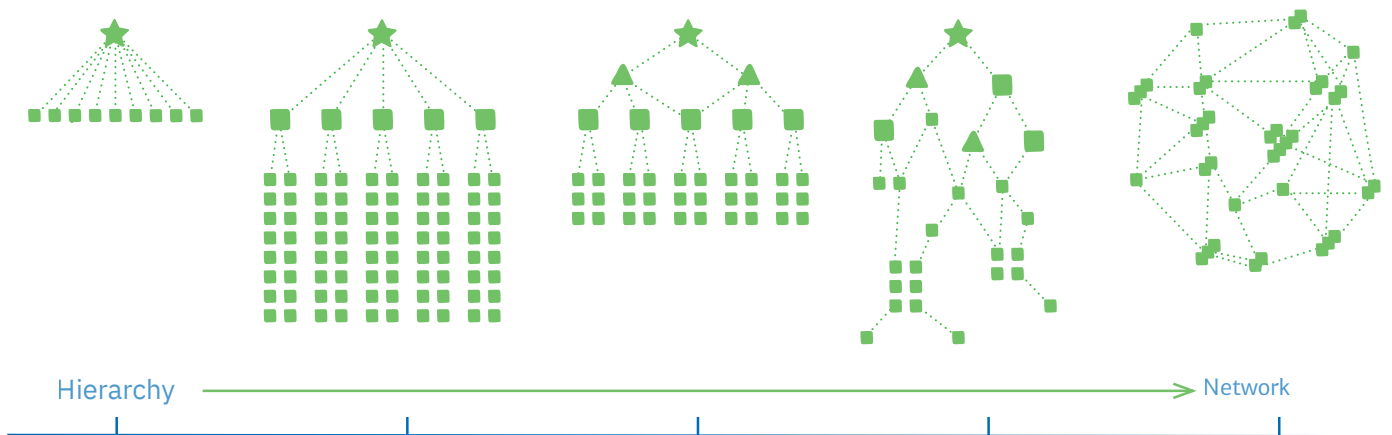
<sup>174</sup> <https://www.jetpress.org/volume9/risks.html>

<sup>175</sup> [https://books.google.co.uk/books/about/Antifragile.html?id=T9hbUv4NIUOC&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/Antifragile.html?id=T9hbUv4NIUOC&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

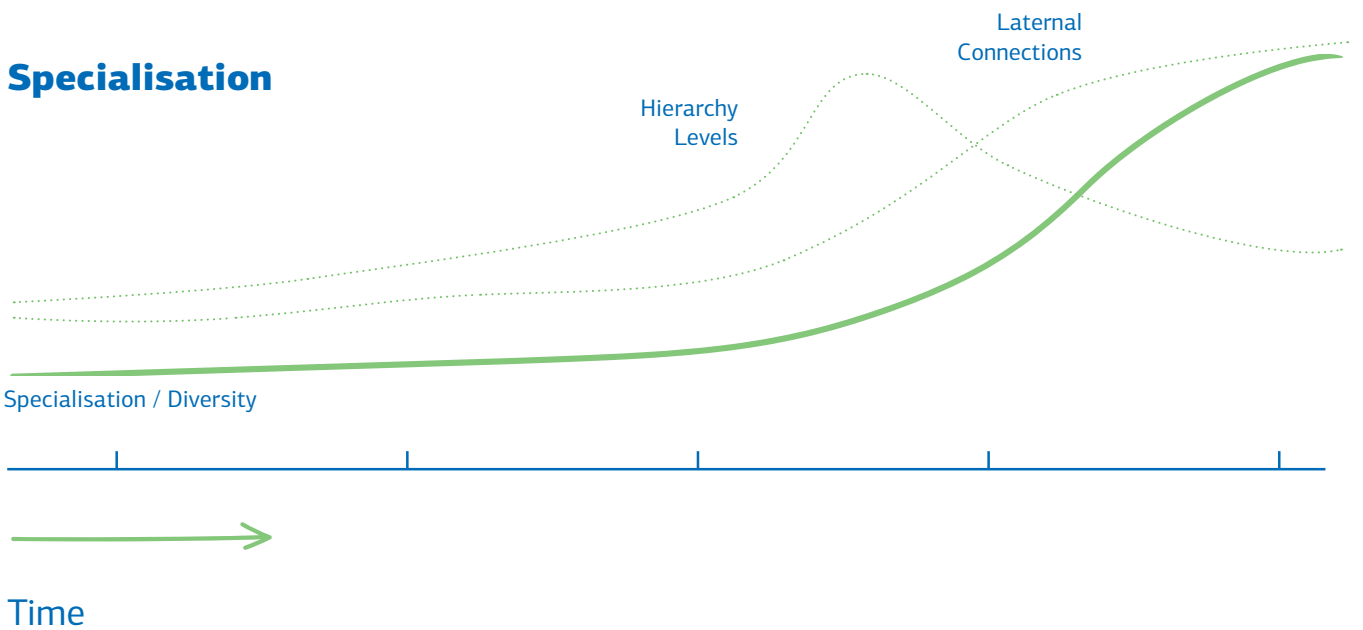
## Complexity Progression



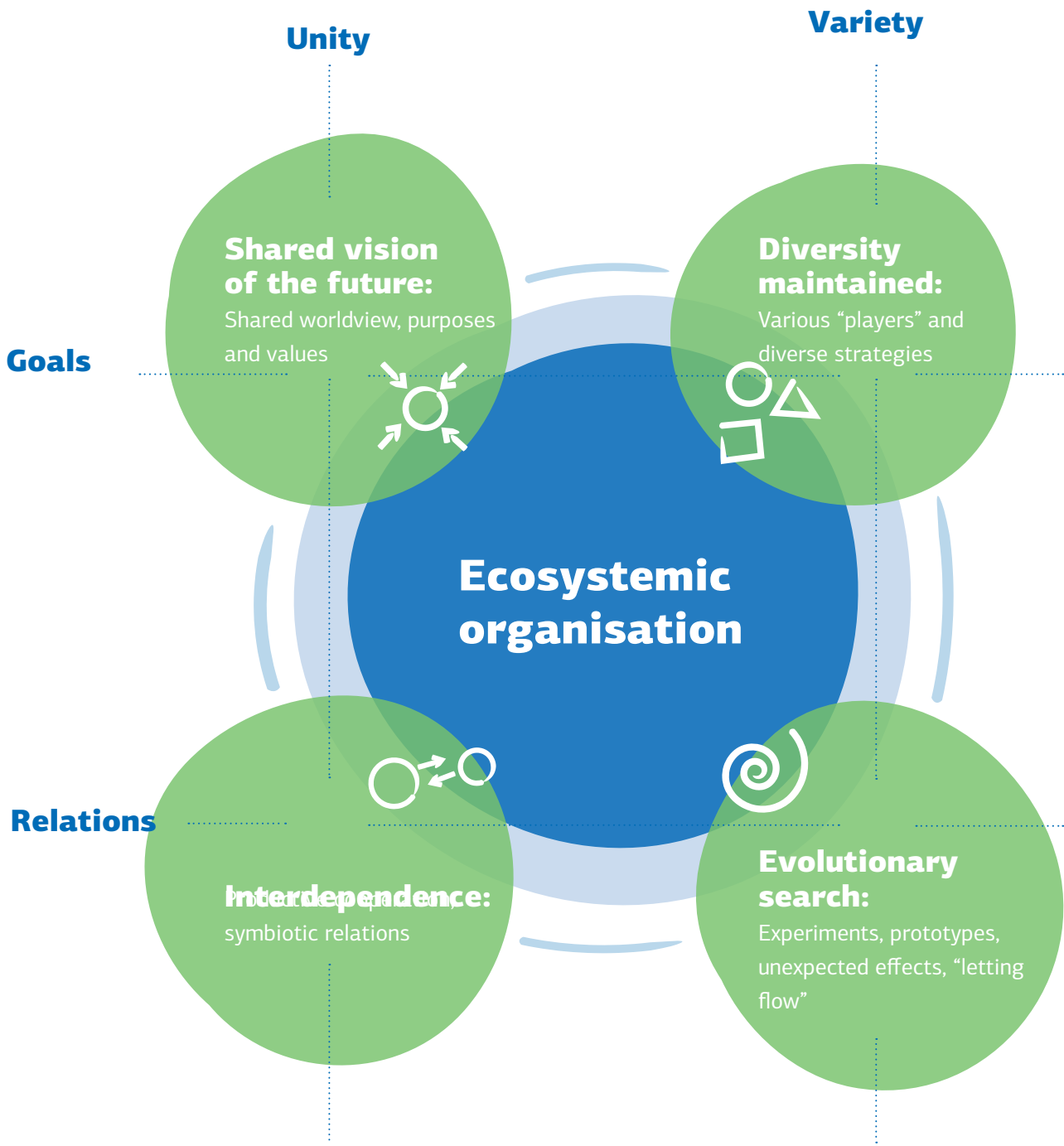
## Control Structure



## Specialisation



**Figure 2:** Evolution of models of governance<sup>171</sup>



**Figure 3:** “Paradoxical” qualities of ecosystemic organization

of the globe, especially the continual negative impacts we've had on nature and the potential destructive conflicts within our society. Thus, the main role in global risk prevention should be attributed to individual and collective competencies that foster local, national, and global wellbeing.

As we move from the industrial age into the digital we notice that the digitalisation of our society and education is a continuation of the industrial paradigm in many regards. The spreading of machine like action and behaviour into a greater number of activities such as personal, processes, and relationship building is apparent in much of what we do. Yet, simultaneously in the face of this technofying trend, there are of course alternative pathways we might choose to take that are based upon our ecological evolutionary heritage. We can, if we choose, reconnect with the natural world, with the "Nature" within us, and cultivate ways of thinking and action which are organic and connected to the living systems, the ecosystems of which we are a part. In the face of future scenarios we can continue to invest in siloed industrial and digital infrastructure or we can model the intelligence of nature and incorporate our technological advances into web's of interconnection inspired by living ecosystems.

The term ecosystem was used for the first time as early as 1935 and was used to mean an agglomeration of living and non-living objects, independent, but connected, acting concurrently during the whole life cycle<sup>176</sup>. It was recognised that every ecosystem is unique, but all of them consist of the same groups of agents, including energy producers (autotrophs), energy consumers (heterotrophs) and non-living objects, or environment, and inherit common traits like adaptability,

diversity, connectivity, and the ability to distribute and recycle resources. A small group of intellectuals such as Edgar Morin, French philosopher and sociologist, elevated the concept of ecosystems which gained paradigm status covering the complex interactions between its living and nonliving components<sup>177</sup>. This new dimension of the term lends itself to exploring the metaphoric potential of biological ecosystems for other disciplines. The fact that ecosystems are so common and widespread in nature indicates that this way of organizing is most efficient from an evolutionary point of view, as it has been selected over any other ways in the 4 billions years of history of life. It allows life to self-organize in all its incredible variety, while keeping maximal sustainability and resilience of any given ecosystem in its interconnection with the rest of the world.<sup>178</sup>

So how do we embrace complexity and make it work for us? System science suggests that ecosystems have a paradoxical ability to maintain both the unity and the variety for an advantageous way of governing (Figure 3). The unity is established by creating shared interaction protocols and orientation of all ecosystem participants towards cooperation, as well as by setting up shared values and long term goals. The variety is established by "evolutionary" protocols in that there is no single plan for the ecosystem, and any participant can engage in experimentation or exploration, and any participant can either achieve "evolutionary success" (begin to develop, grow, spread) or fail and "die out."

Due to increasing complexity, connectivity, and proximity multi-stakeholder interconnections are increasing. Out of this trend complex networks of knowledge production are arising. Assembly-line learning and industrial inspired

<sup>176</sup> [https://www.researchgate.net/publication/225537620\\_The\\_Ecosystem\\_as\\_a\\_Multidimensional\\_Concept\\_Meaning\\_Model\\_and\\_Metaphor](https://www.researchgate.net/publication/225537620_The_Ecosystem_as_a_Multidimensional_Concept_Meaning_Model_and_Metaphor)

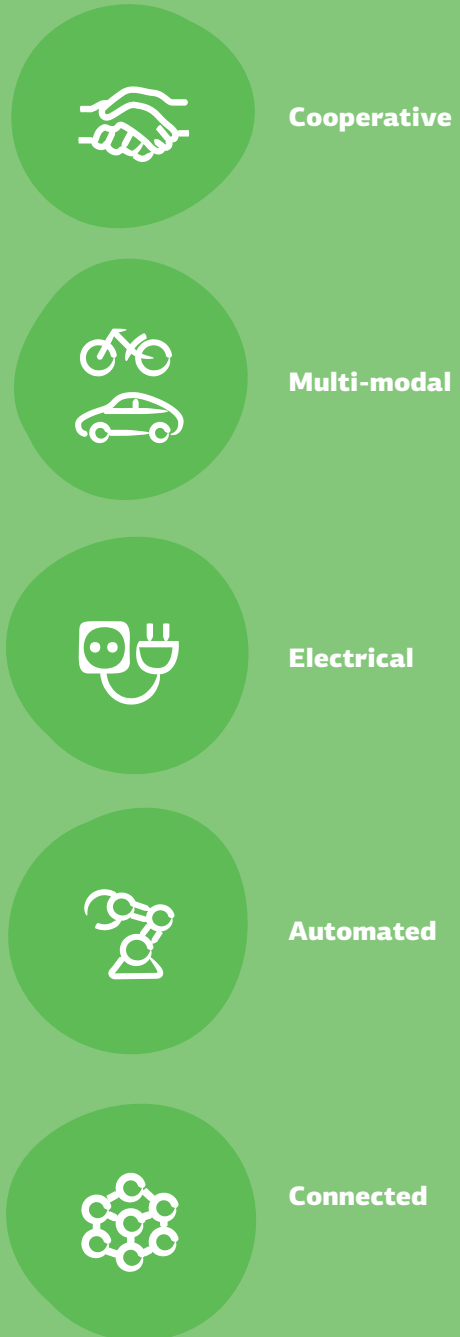
<sup>177</sup> [https://www.iemed.org/observatori/arees-danalisi/arxiu-adjunts/qm-16-originals/roquema\\_towards%20ecologised%20thought%20interview%20with%20edgar%20morin\\_qm16.pdf](https://www.iemed.org/observatori/arees-danalisi/arxiu-adjunts/qm-16-originals/roquema_towards%20ecologised%20thought%20interview%20with%20edgar%20morin_qm16.pdf)

<sup>178</sup> <https://wtf.tw/ref/meadows.pdf>

## Transport

Smart technology can help address many transportation problems and evolve the industry as a whole through ecosystemic connection<sup>179</sup>. Massive breakthroughs in transportation-related AI technology are already occurring today, with autonomous vehicles surging in popularity around the globe. All major car manufacturers are currently exploring autonomous vehicles, with companies like Google and Lyft having autonomous fleets roam the streets of many cities. The Department of Transportation, in the US, has also recognized the impact AI has, creating proposals for cities that are looking into smart infrastructures. It will award \$40 million USD to a city that can demonstrate how to effectively solve critical municipal challenges using innovative transportation technologies, data, and applications<sup>180</sup>. Other examples include, NewCities<sup>181</sup>, a global nonprofit committed to shaping a better urban future, they are developing services so all players in the transport ecosystem can interact in a safe and globally deployable way. They have partnered with Ericsson<sup>182</sup>, whose approach to connecting the transportation industry is focused on providing solutions in three stages: connected, cooperating and automated. They believe that connected transport must meet three criteria: 1) multimodal — using different modes of transport in a smart way 2) shared — both vehicles and transport infrastructure must be shared in a smart way 3) managed — achieved through services such as smart booking, smart traffic management and smart payments.<sup>183</sup>

The transport industry is moving towards solutions that are:



**Figure 4.** Ecosystemic organization of transportation sector<sup>184</sup>

education systems are not designed to evolve to meet this kind of increasing complexities facing society today. Siloed institutions, are, and will continue to be made redundant in a future increasingly shaped by complex inter-connection and interdependence. We therefore need, and are indeed at the beginning of an “ecosystemic transition” through which we will need to embrace the wisdom of living systems and model our relationships, interactions, and organizing processes after the living complex adaptive systems upon which all life depends. One indicator of this emerging transition is the increasing use of the term “ecosystem” across a great variety of sectors, from transportation and energy to healthcare, city administration, social innovation and the arts.

While there are indeed various approaches to “ecosystems organizing” developing across a wide spectrum of domains as the above highlights, in educational contexts learning ecosystems tend toward emphasizing a new type of education altogether; a way of learning that replaces mechanistic approaches with those dedicated to fostering flourishing lives and futures. The present paradigm of education was created around two centuries ago in the interest of national states and the rising sector of mass-scale industrial production. At the heart of the system was adherence to the standard and suppression of originality and creativity, and its purpose was to produce loyal citizens and obedient workers. However, with the rise of a complex society which is driven by creativity and innovation and adhering to inclusivity and democratization, old forms of organized learning become increasingly irrel-

evant. The emerging format of a learning ecosystem is often touted as a new paradigm of education, contrasted with existing educational systems.

One of the earliest uses of this notion in education, describing the innovative approach of Virginia Polytech indicates: “Educational Ecosystem involves assets and interests of all stakeholders (faculty, students, industry, community, and specific individuals within each of these categories) combined to achieve synergistic results that benefit all.”<sup>188</sup> It moves from the total indifference of the uniqueness of each individual to appreciating everyone’s ability to provide a means to integrate a diverse milieu of learning opportunities in a holistic and life affirming way. The Innovation Unit, for example, first released a report on education ecosystems in 2011 in partnership with CISCO entitled *Developing an Innovation Ecosystem for Education*<sup>189</sup>. With the field of social innovation exploring ecosystems for the last decade it’s unsurprising that we see the term innovation as the central focal point of this work. We now see 8 years later the release of another report by the Innovation Unit, this time in partnership with WISE, *Local Learning Ecosystems: Emerging Models*<sup>190</sup>. This work showcases 9 case studies of eco-systemic approaches based on the following qualities: they 1) are diversifying learning resources and pathways for learners, 2) are activating and sharing resources for learning in new ways from diverse sources, 3) are dynamic in composition and porous around the edges, 4) are supported by helpful infrastructure, 5) comprise formal and informal learning insti-

<sup>179</sup> <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=755&menu=1515>

<sup>180</sup> <https://medium.com/kambria-network/series-6-transforming-the-transportation-ecosystem-f7a9c13d2969>

<sup>181</sup> <https://newcities.org/transforming-transport-by-building-ecosystems-not-ego-systems/>

<sup>182</sup> <https://www.ericsson.com/en>

<sup>183</sup> <https://newcities.org/transforming-transport-by-building-ecosystems-not-ego-systems/>

<sup>184</sup> <https://www.ericsson.com/en>

<sup>188</sup> [http://www.globaledufutures.org/images/people/GEF\\_april26-min.pdf](http://www.globaledufutures.org/images/people/GEF_april26-min.pdf)

<sup>189</sup> <https://www.innovationunit.org/publications/developing-an-innovation-ecosystem-for-education/>

<sup>190</sup> <https://www.innovationunit.org/publications/local-learning-ecosystems-emerging-models/>

## Social Innovation

Around the world social innovation is on the rise as public, private, governmental, and multi-stakeholder innovators seek to address societal challenges at both the local and global scale. This trend speaks to the recognition that social innovation is not a luxury for the few, but rather a necessity for all. In this light, Tonya Surman and the Centre For Social Innovation<sup>185</sup> team in Toronto, Canada suggests that “Social innovation refers to the creation, development, adoption and integration of new and renewed concepts, systems and practices that put people and planet first. At their best, social innovations tackle the root causes of problems by changing the systems that are causing the problem<sup>186</sup>.” The McConnell Foundations Re-Code initiative, for example, aims to reimagine schools as an integral part of communities to develop and amplify social innovation’s thereby “re-coding education to meet today’s social challenges”. Furthermore, Social Innovation Canada, a national initiative dedicated to connecting and amplifying the social innovation ecosystem across the country and beyond, is an exemplar of creating the collaborative and digital infrastructure to engage, nourish, and grow ecosystem approaches to addressing root causes and co-creating systems level solutions. Additionally, many around the world, seeking to empower social innovation initiatives including practitioners, researchers, and policy

makers alike are increasingly committed to the development of “innovation ecosystems”. Elizabeth Hoeffcker at the MIT D-Lab for example, has been conducting research on innovation ecosystems, which they define as “place-based communities of interacting actors engaged in producing innovation and supporting processes of innovation, along with the infrastructure and enabling environment which allows them to create, adopt, and spread solutions to local challenges.” Across different contexts around the world, it has been found that developing innovation ecosystems, or strengthening ones that already exist, produce a consistent set of benefits for innovators, entrepreneurs, and localities, including:

- 1) Common assets, including physical assets such as workshop and co-working spaces and financial assets like new savings and loan funds for innovators.
- 2) Shared infrastructure, including communication infrastructure and “relationship infrastructure,” such as new networks and linkages between members of the system.
- 3) New resources, including information, new know-how, and a workforce with enhanced skills specific to certain industry and innovation niches.
- 4) Favorable operating conditions for innovation, including changes in norms, rules, and policies to create a more-level playing field.
- 5) New capacities within the system—such as large-scale production, distribution, and collective action capacities that enable coalitions to achieve results that no single member of the ecosystem could have achieved on its own.<sup>187</sup>

<sup>185</sup> <https://socialinnovation.org/>

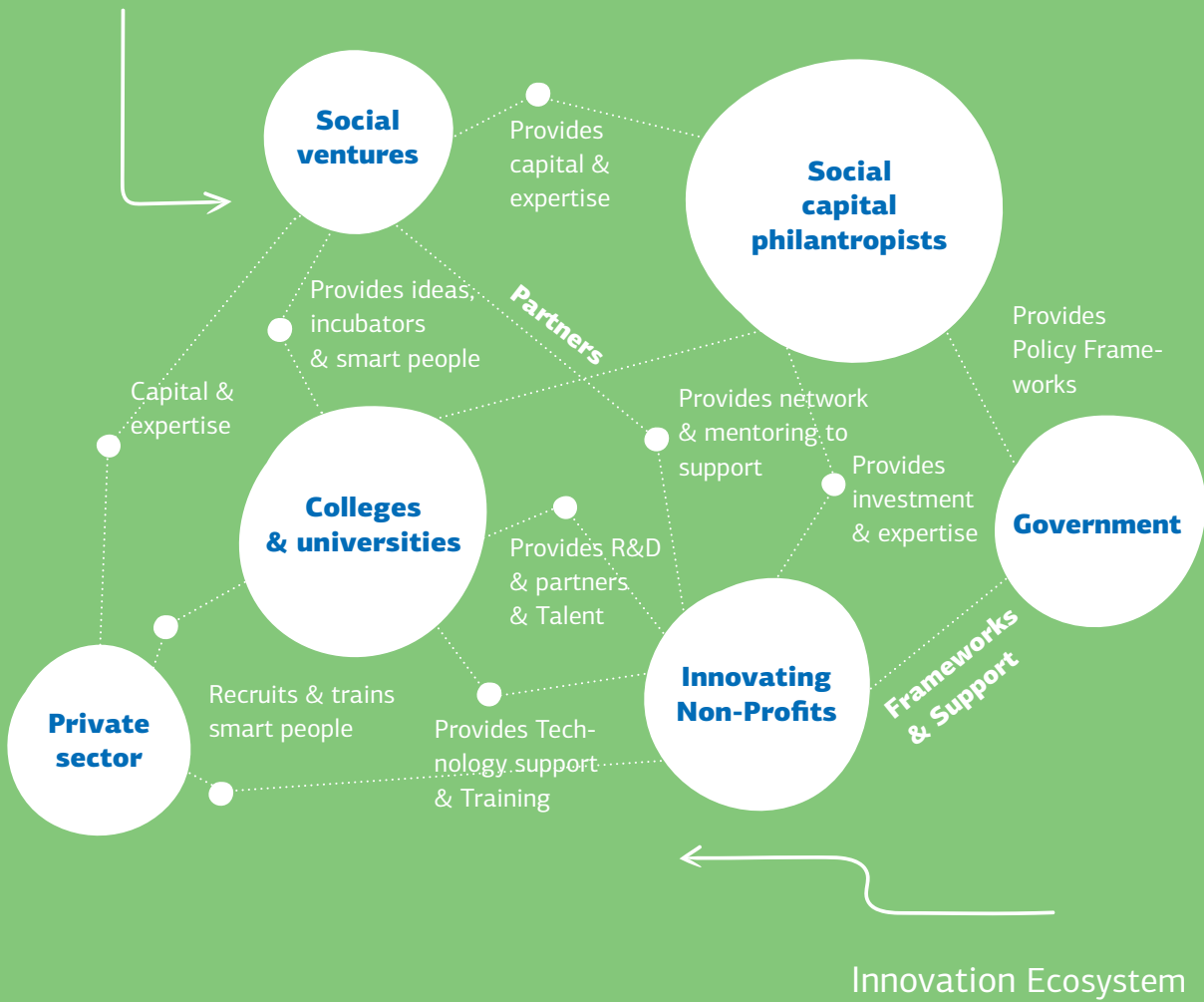
<sup>186</sup> <https://socialinnovation.org/wp-content/uploads/2018/12/Unlocking-Canadian-Social-Innovation-.pdf>

<sup>187</sup> [https://ssir.org/articles/entry/why\\_cultivating\\_your\\_innovation\\_ecosystem\\_is\\_worth\\_the\\_work#](https://ssir.org/articles/entry/why_cultivating_your_innovation_ecosystem_is_worth_the_work#)

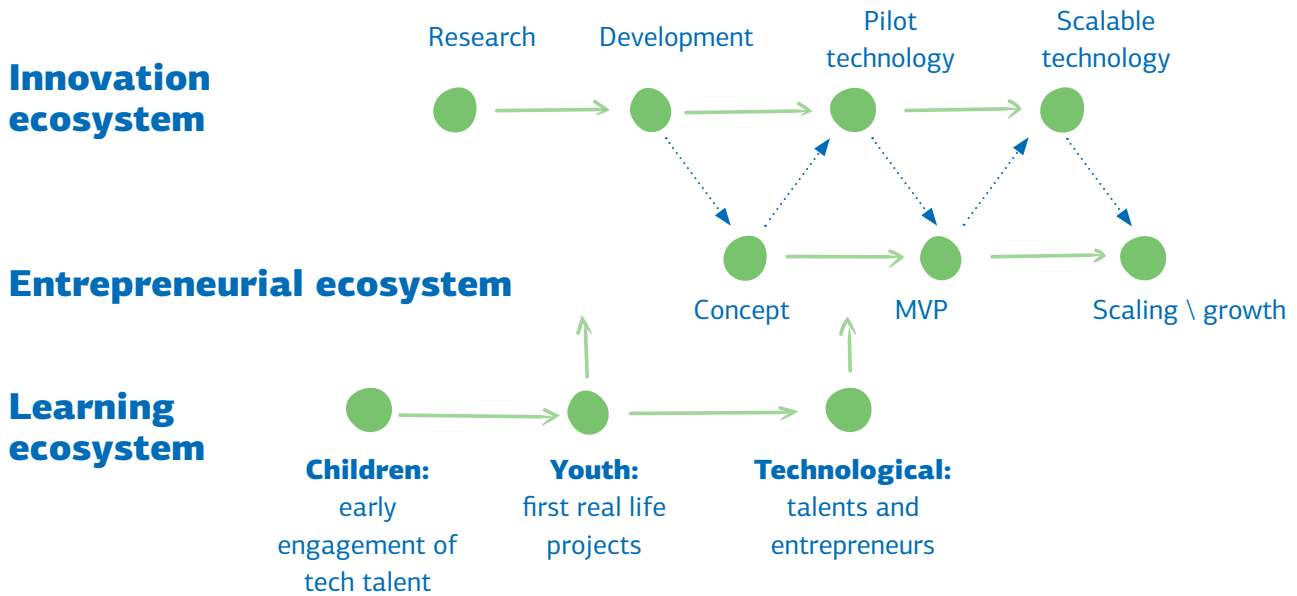


## Social Innovation Ecosystem

Start-up Ecosystem



Source: <https://www.nyjerson.ca/content/dam/diversity/reports/social-innovation-shaping-canadas-future.pdf>



**Figure 5:** An example of how multilayered ecosystems are interdependent at an entrepreneurial, innovation and learning ecosystems level

tutions, traditional and new entrants, 6) have distributed governance, 7) are learner driven or have learner agency at their heart and 8) make an attempt to meet twenty-first century challenges in some way, beyond academic attainment.

Whilst the Innovation Unit focus on the local learning ecosystems, they also highlight two other kinds of ecosystems they believe to be within existence and of particular note for education: 1. Knowledge sharing ecosystems, operating at global or national level and 2. Innovation ecosystems, operating at city or jurisdiction level. Rosie Clayton’s Building Innovation Ecosystems in Education to Reinvent School: A study of innovation & system change in the USA<sup>191</sup>, also explores in her research, the importance of innovation ecosystem culture in schools, in which multiple actors who disrupt existing practices to design

new learning models and new communities for learning are key. This is unsurprising as in recent years, high expectations were set with digital educational technologies that were expected to revolutionize the paradigm of education. It was often anticipated that the digitalization of education would make it more human-focused, more interconnecting, more learner-empowering, similarly to many other spheres of human interaction. However, during the last couple of decades it became evident that the digital paradigm in education does not necessarily make education “ecosystemic”. Not every form of new, digitized education is learner centered and learner empowering. It can also become a way of continuing the old paradigm, the one keeping learners passivized and obedient.

Then it must be noted that it seems that the essence of what it means to learn “ecosys-

<sup>191</sup> <https://www.wcmt.org.uk/sites/default/files/report-documents/Clayton%20R%20Report%202016%20Final.pdf>

<sup>192</sup> <https://www.uwc.org/>

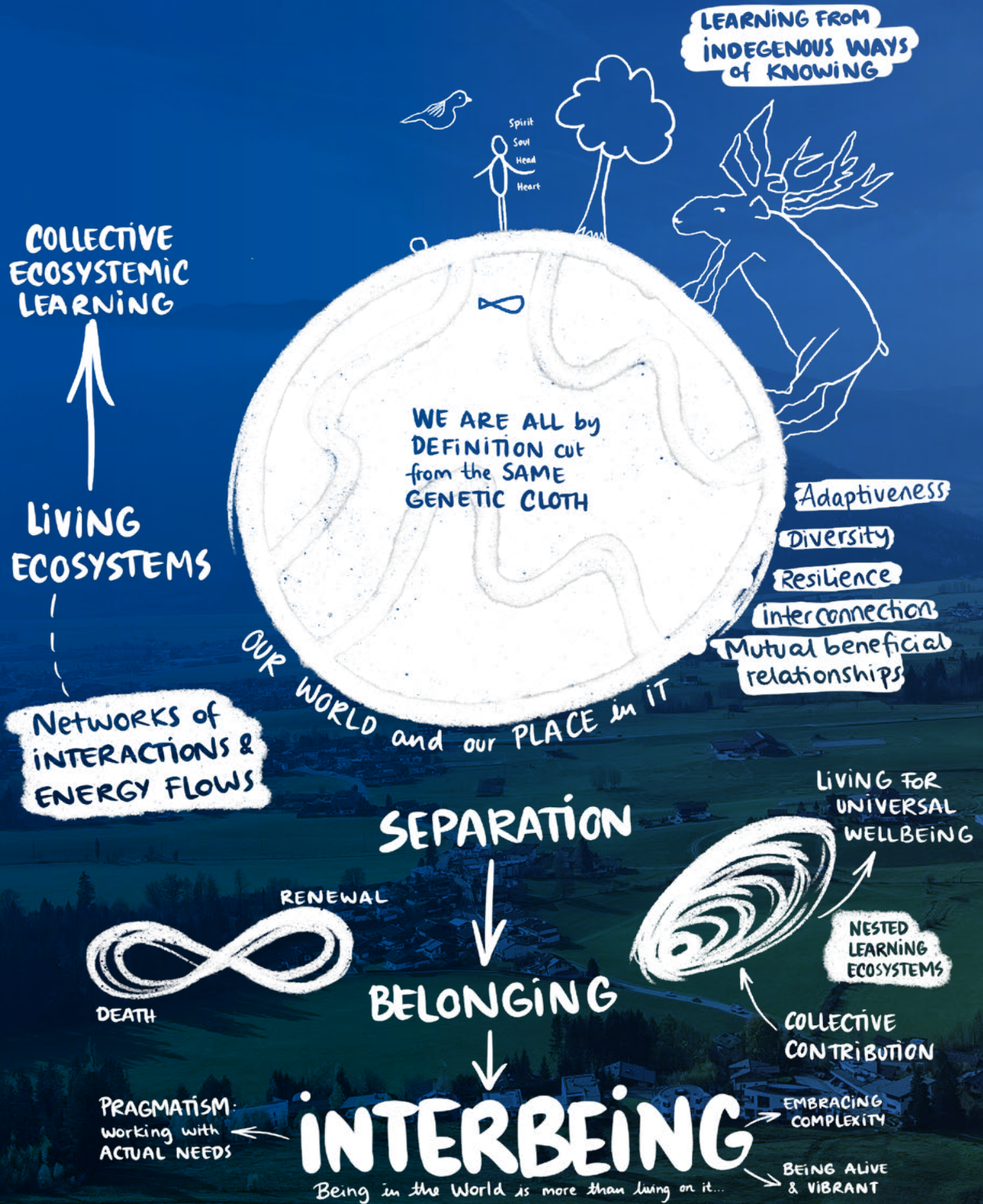
temically” is multifaceted. Ecosystemic “ways of being” are interconnected and seek to form patterns and rhythms that synchronize related parts of society. Learning ecosystems are not isolated responses to challenges that educational systems face, rather they support the integration of other sectors towards collective learning. Learning ecosystems should be seen then as integrating various types of innovation, entrepreneurial, and learning ecosystem approaches (Figure 5). For example, let us consider an ecosystem for new technological sectors, such as Silicon Valley, Boston area, Tel-Aviv, or ELAT (Eindhoven-Leuven-Aachen Triangle).

For such an ecosystem to function adequately, it requires all kinds of support to entrepreneurial projects at different stages, such as meetups, coworking spaces, seed funding and mentorship. But an entrepreneurial ecosystem will only be successful if coupled with the knowledge/innovative ecosystem, where universities, labs, and industrial partners work together to bring ideas from research and convert them into scalable industrial technologies. Yet none of these ecosystems will be able to develop and grow unless a constant inflow of people with the necessary skills and wellbeing are working together. In our ever-changing world, and often stress inducing

world, we must nurture skills and wellbeing, engaging with much longer cycles of human development that starts at school and even preschool stage, or even earlier. All educational systems, we suggest, must become learning ecosystems supporting collective thriving.

What seems to be emerging then is that ecosystemic approaches when combined can strengthen capacity building for entrepreneurial, innovation, and learning competencies. Learning across multi-stakeholder groups fosters opportunities for uncommon collaborations and, when partnered with inter-generational and lifelong learning opportunities, set the stage for a radical shift in how education systems could be organized. There is no standardized “one size fits all” approach to a new paradigm of learning in our complexifying times. What is called for is a transformational approach to learning and education as a force for good and peacemaking. This is what inspired schools such as the [United World Colleges](#)<sup>192</sup> the possibility that education can be “a force to unite people, nations and cultures for peace and a sustainable future”. The opportunity and challenge inherent in this trajectory is to discover together how we can unify lifelong, multi-stakeholder, and truly transformational learning. ■

# A WEB OF LIFE



# 2

## The Purpose of Learning Ecosystems and Emerging Definitions

# 2.1

## Learning As Ecosystems

This research suggests we are witnessing, across diverse educational contexts, the increasing use of the term “learning ecosystem”. Understanding how “living ecosystems” function and evolve is a prerequisite to understanding how “learning ecosystems” may better serve learners than industrial education models. This shift from “industrial” to “ecosystemic” requires us to understand how living ecosystems can inform our understanding of collective learning. It also will require many to unlearn the colonial ways of thinking and acting that are being cemented around the world through the proliferation of industrial ways of living and learning. Human traditions the world over offer diverse insight into our understanding of the world. While Western education systems focus on the scientific paradigm as a primary source of knowledge, this is but one lens through which to understand reality. There are many perspectives and worldviews, traditions and ways of knowing that can teach us about our world and our place in it. Indigenous science and the Traditional Ecological Knowledge<sup>193</sup> of indigenous peoples around the world for example is a profound source of wisdom. Unfortunately, indigenous ways of knowing are too often eradicated rather than celebrated in conventional educational systems. Optic and oral histories prominent in indigenous traditions are often dismissed while western scientific perspectives are prioritized thus limiting worldviews and reinforcing dominant voices and dismissing

or harming communities, homelands, and habitats vital to our understanding of life and our planet<sup>194</sup>. Thankfully these oppressive and violent tendencies within industrial education paradigms are changing and people around the world are awakening to the wisdom of indigenous knowledge and beginning to realise that the viability of our human systems may be dependent on our ability to learn multi-culturally. In the words of Vandana Shiva, “dominant modes of perception based on reductionism, duality and linearity are unable to cope with equality in diversity, with forms and activities that are significant and valid”<sup>195</sup>. As Tulalip Elder Janet McCloud elucidates, the most endangered species on Earth, humanity, is part of nature and must remember our connection to everything that lives in order to survive<sup>196</sup>. Furthermore, academic, author and activist David Suzuki suggests that “aboriginal people are our best bet for protecting the planet, not environmentalists”<sup>197</sup> specifically because of the cultural/ecological orientation of indigenous people and the recognition of our dependence on living systems.

Theoretical physicist F. David Peat, author of *Blackfoot Physics*, suggests that

‘Indigenous Science... is a science of harmony and compassion, of dream and vision, of Earth and cosmos, of hunting and growing, of technology and spirit, of song and dance, of colour and number of cycle and balance, of death and renewal.’<sup>198</sup>

We can look to Indigenous Science and Traditional Ecological Knowledge (TEK) “often described as local and holistic, integrating the physical and spiritual into a worldview or “cosmovision” that has evolved over time and emphasizes the practical application of skills

<sup>193</sup> [https://books.google.co.uk/books/about/Blackfoot\\_Physics.html?id=ZMP21NgGlx8C&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/Blackfoot_Physics.html?id=ZMP21NgGlx8C&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

<sup>194</sup> <https://e360.yale.edu/features/native-knowledge-what-ecologists-are-learning-from-indigenous-people>

<sup>195</sup> <https://www.powells.com/book/staying-alive-women-ecology-and-development-9781623170516?partnerid=33733>

and knowledge”<sup>199</sup> to learn from indigenous peoples about the web of life, and our place in our interconnected ecologies. Rather than being in contrast to a eurocentric scientific paradigm, TEK can help us see the relationships we have to the land, the places we call home, to ourselves and each other, and all life<sup>200</sup>.

Sherri Mitchell Weh’na Ha’mu Kwasset, Indigenous rights activist, spiritual teacher, and transformational change maker, speaks of the interconnection and unification of all life in the world and an understanding that comes from an “umbilical connection”:

“Evidence of our shared origin can be found all around us. Science has finally caught up with what we have always known, that we are all related. We are all made out of the same foundational elements... Our songs, stories, and mythologies all speak of our interrelatedness. From birth, we are taught to be aware of the expanded kinship networks that surround us, which include other human beings along with the beings of the land, water, and air, and the plants, trees, and all remaining unseen beings that exist within our universe. This multisensory understanding of life is now blossoming across the planet, and we are witnessing humanity awaken to a whole new level of being. We are able to recognize, for perhaps the first time in our history, that we are in the process of an evolutionary leap, which makes this a very exciting time to be alive.”<sup>201</sup>

This “multisensory”, multigenerational, and spiritually diverse understanding of Earth, the cosmos and our interrelationship has the potential to remind us all that we are inextricably a part of the living systems from which we come and to which we contribute. Ecosystems are not something “out there”, not merely a distantly observable phenomenon, but rather, humans as individuals and collectively are part of the ecosystems we seek to understand. Indigenous wisdom traditions and indigenous science can support us in remembering our place in and relationship with all life. Robin Wall Kimmerer author of *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* suggests

“In the Western tradition there is a recognized hierarchy of beings, with, of course, the human being on top—the pinnacle of evolution, the darling of Creation—and the plants at the bottom. But in Native ways of knowing, human people are often referred to as “the younger brothers of Creation.” We say that humans have the least experience with how to live and thus the most to learn—we must look to our teachers among the other species for guidance. Their wisdom is apparent in the way that they live. They teach us by example. They’ve been on the earth far longer than we have been, and have had time to figure things out.”<sup>202</sup>

<sup>196</sup> <https://www.culturalsurvival.org/news/defenders-our-sacred-mother-native-wisdom-keepers-speak-out>

<sup>197</sup> <http://www.vancouversun.com/technology/David+Suzuki+Aboriginal+people+environmentalists+best+protecting+planet/11112668/story.html#:~:text=protecting%20the%20planet-,David%20Suzuki%3A%20Aboriginal%20people%2C%20not%20environmentalists%2C%20are%20our%20best,bet%20for%20protecting%20the%20planet>

<sup>198</sup> [https://books.google.co.uk/books/about/Blackfoot\\_Physics.html?id=ZMP21NgGlx8C&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/Blackfoot_Physics.html?id=ZMP21NgGlx8C&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

<sup>199</sup> <https://web.archive.org/web/20090304031845/http://www.ser.org/iprn/tek.asp>

<sup>200</sup> <https://books.google.co.uk/books?hl=en&lr=&id=J2CNS64AFvsC&oi=fnd&pg=PR6&dq=traditional+ecological+knowledge&ots=KBlhGhysFl&sig=F-5wexUY6DHqKOpeCNKANII6nh8I#v=onepage&q=traditional%20ecological%20knowledge&f=false>

In order for us to learn as ecosystems we must become apprentices of the living world and be in intentional and respectful relation with all life. We must become “kincentric” through which we acknowledge all beings as our kin.<sup>203</sup> Learning as ecosystems will require us to shift narratives from separation and independence toward belonging and “interbeing”.<sup>204</sup> If we are to shift from industrial models of learning to organizing toward ecosystemic learning then modeling the genius of living systems, and learning from peoples who traditionally hold this knowledge is one of our greatest hopes for shifting education toward ecosystemic learning and praxis.

Western scientific traditions on the other hand, particularly from the advent of natural sciences, present a variety of perspectives contributing to our understanding and relationship with the living world. As researchers, our hope is that what follows adds to the conversation of what an ecosystem is and how we might learn from living ecosystems and organize learning ecosystems inspired by the wisdom of nature. With the aim of offering an overview of evolving perspectives of ecosystems from an occidental orientation, a quick online search for the term “biological ecosystem” points to definitions such as the following:

“An ecosystem is a community of living organisms in conjunction with the nonliving components of their environment, interacting as a system. These biotic and abiotic components are linked together through nutrient cycles and energy flows.”<sup>205</sup>

“An ecosystem is a large community of living organisms (plants, animals and microbes) in a particular area. The living and physical components are linked together through nutrient cycles and energy flows. Ecosystems are of any size, but usually they are in particular places.”<sup>206</sup>

<sup>201</sup> <https://sacredinstructions.life/sacred-instructions-chapter-1/>

<sup>202</sup> [https://www.goodreads.com/author/quotes/49921.Robin\\_Wall\\_](https://www.goodreads.com/author/quotes/49921.Robin_Wall_)

<sup>203</sup> <https://www.fws.gov/nativeamerican/pdf/tek-salmon-2000.pdf>

<sup>204</sup> <https://www.garrisoninstitute.org/blog/insight-of-interbeing/>

<sup>205</sup> <https://www.google.com/search?q=what+is+an+ecosystem&oq=what+is+an+ecosyste&aqs=chrome.0.0j69i57j0l4.2133j0j7&sourceid=chrome&ie=UTF-8>

<sup>206</sup> <https://simple.m.wikipedia.org/wiki/Ecosystem>





**Figure 6.** NASA image of Sahara dust carried to Amazon basin

Both of these definitions focus on the inter-relationship and community centrism of ecosystems, recognising ecosystems as place-based and that the component parts of ecosystems are united in collective unfolding.

Life on Earth is organized in ecosystems. Every complex community of organisms (a biome) and our biosphere as a whole is organized ecosystemically. For example, on a micro level our bodies are in fact ecosystems of symbiotic microbes and bacteria that greatly influence our lives and health. It is a striking discovery to understand that approximately 99% of the human genome does not belong to us but to these symbionts<sup>207</sup>. On a macro level, microbes are distributed across the planet via weather patterns, as is phosphorus-rich dust from the Sahara desert carried to the Amazon basin fertilizing the rainforest<sup>208</sup> (Figure 6).

Our lives are inextricably united and embedded at the micro and macro level in the ecosystems from which we have evolved and that we contribute to moment by moment simply by being alive. Ecosystems are a viable life organising pattern for continued evolution and

as the definitions above suggest, ecosystems include an array of dynamic variables, such as:

- Ecosystems are both highly **adaptive** (i.e. they can modify themselves in response to disturbances or interventions) and highly **resilient** (i.e. they can regenerate themselves if disrupted or damaged)
- Ecosystems foster **diversity, interconnection** and **mutualistic** or **symbiotic relationships** (A great example is micorise, a symbiosis of mycelium and tree roots that connects trees in a forest as a deeply interwoven system)
- Ecosystems include a **variety of integral roles** in relation to each other and to an **environment**. Ecosystem hosts for example, establish non-competitive and **mutually beneficial relationships** with species in the ecosystem, usually providing home and shelter for them. Ecosystems of greater maturity also shift to highly complex collaboration where each part of the system (mostly) works together to balance the whole overcoming limitations of competition for

<sup>207</sup> <https://www.npr.org/sections/health-shots/2012/06/13/154913334/finally-a-map-of-all-the-microbes-on-your-body>

<sup>208</sup> <https://www.nasa.gov/content/goddard/nasa-satellite-reveals-how-much-saharan-dust-feeds-amazon-s-plants/>

## The concept of a business ecosystem

In 1993 the business strategist James Moore adopted the biological concept a Harvard Business Review article “Predators and Prey: A New Ecology of Competition,” in which he paralleled companies operating in the increasingly interconnected world of commerce to a community of organisms adapting and evolving to survive. Moore suggested that a company be viewed not as a single firm in an industry, but as a member of a business ecosystem with participants spanning across multiple industries. To Moore a business ecosystem was:

“An economic community supported by a foundation of interacting organizations and individuals—the organisms of the business world. The economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organisms also include suppliers, lead producers, competitors, and other stakeholders. Over time, they co-evolve their capabilities and roles and tend to align themselves with the directions set by one or more central companies. Those companies holding leadership roles may change over time, but the function of ecosystem leader is valued by the community because it enables members to move toward shared visions to align their investments and to find mutually supportive roles.”

To this end, it was identified that a business ecosystem consists of a network of interlinked companies that dynamically interact with each other through competition and cooperation to grow sales and survive. An ecosystem includes suppliers, distributors, consumers, government, processes, products, and competitors. When an ecosystem thrives, it means that the participants have developed patterns of behavior that streamline the flow of ideas, talent, and capital throughout the system.

self-survival. (Two great examples of hosts are coral reefs in the sea and “mother trees” in forests.<sup>209</sup>)

- Ecosystems have **reinforcing, self-regulating** and **balancing** functions that support the health of a given ecosystem. (For example predator / prey relations create a system of checks and balances between different species that limit risks of overpopulation and produce ecosystems of higher complexity and variety. “How wolves change rivers” a vignette of how reintroducing wolves to Yellowstone Park changed the course of rivers provides a great illustration of this dynamic.<sup>210</sup>)
- Ecosystems **circulate resources** and make use of all available resources in a given system. They tend toward **maximal “productive capacity”** — i.e., they sustainably **foster and transform** the maximum possibility of living matter given the amount of solar radiation, water and other key resources available.

In addition to the above mentioned evolutionary and biological attributes of ecosystems, social scientists have a long tradition of “borrowing” biological concepts to understand complex societal dynamics. This Western rationalized perspective usually narrowed the complex dynamics of life to a particular aspect, leading to oversimplified and often erroneous conclusions. For instance, two late-19 century social scholars, Herbert Spencer and Piotr Kropotkin, both took inspiration from then recently-published Origin of Species by Charles Darwin. Yet Spencer emphasized the competition as a driver of evolution: he coined “survival of the fittest” as the main principle of natural evolution, and suggested that these dynamics explain and justify the social inequality, becoming one of the founding fathers of “Social Darwinism”. Kropotkin, on the contrary, suggested that the main force of evolution is

cooperation between species, and he saw the same dynamics as a driver of social life and progress, he therefore became the founder of anarchism (which in modern terms may also be called decentralized or network based society). While both researchers derived their social theories from the same biological inspiration, they created two social theories that had major real life implications yet were almost incompatible with each other. However, later as social studies were infused with more rigorous system science frameworks, the use of ideas such as evolution or ecosystems has become more nuanced and scientifically motivated. Around three decades ago the ecosystemic approach also began to spread as a way of organizing technological innovation. Even before that, the concept of ecosystem has been used by organizational scholars such as Michael Hannan and John Freeman<sup>211</sup> who explore the evolution of various types of organizations, as well as economists such Richard Nelson and Sidney Winter<sup>212</sup> who explore the evolution of innovations and industries.

Looking at definitions that have sprung up in education, the OECD share, in a report examining entrepreneurial ecosystems for learning, a fairly detailed but nonetheless relevant definition and does, as far as exploring explicitly biomimicry metaphors, showcase what it means to be an ecosystem.

**“Ecosystems are defined by the network of interactions among organisms, and between organisms and their environment. They can be of any size but usually encompass specific, limited spaces. In the world of education,**

**ecosystems may be defined as the full variety of actors (i.e., living species) and all nonliving elements in use for education through teaching and learning. The full variety of actors involves the population inside school (mainly teachers, principals, students, other staff) as well as the population outside school (entrepreneurs, associations, institutions, parents, families, friends and private persons etc.). The non-living (abiotic) elements inside this milieu are defined by all available material means (buildings, classrooms, external locations, tools, IT resources, etc.) and they influence the nature of interaction of populations. All these populations are connected through networks. They form together a meta-population and inhabit the same milieu. In the entrepreneurial school, the nature of this milieu is characterised by a shared entrepreneurial context.”<sup>213</sup>**

Whilst it ends regarding the specificity of the entrepreneurial context, the rest of the definition does explore and highlight the importance of the interactions and ‘full variety’ of the living and nonliving, not so explicitly highlighted in previous definitions. This shows that it isn’t just the stakeholders themselves who are important, but the encompassing physical space, energy and tools within it. It seems that without these facets we could not define it as ecosystemic, drawing parallels with the biological ecosystems and their environment for inspiration.<sup>214</sup>

<sup>209</sup> [https://www.ted.com/talks/suzanne\\_simard\\_how\\_trees\\_talk\\_to\\_each\\_other](https://www.ted.com/talks/suzanne_simard_how_trees_talk_to_each_other)

<sup>210</sup> <https://www.youtube.com/watch?v=ysa50BhXz-Q>

<sup>211</sup> [https://books.google.co.uk/books/about/Organizational\\_Ecology.html?id=UVHDye2683gC&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/Organizational_Ecology.html?id=UVHDye2683gC&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

<sup>212</sup> [http://inctpped.ie.ufrj.br/spiderweb/pdf\\_2/Dosi\\_1\\_An\\_evolutionary-theory-of\\_economic\\_change.pdf](http://inctpped.ie.ufrj.br/spiderweb/pdf_2/Dosi_1_An_evolutionary-theory-of_economic_change.pdf)

<sup>213</sup> <http://www.oecd.org/cfe/leed/Outward-Looking-School-and-Ecosystem.pdf>

<sup>214</sup> <http://www.oecd.org/cfe/leed/Outward-Looking-School-and-Ecosystem.pdf>

Exploring the variety of definitions we can see some defining common threads, especially examining them in connection to one another. The main common element seems to be in social ecosystems: a diverse, multi stakeholder community of interconnected relationships. Then, in relation to education, they must offer a new way of organising learning. It's also highlighted that ecosystems do not just mean the living elements, but also the spaces, tools and technology which creates the full 'working' system. Descriptors of social ecosystems all aim for a vastly improved organisation and in the case of education, provision of learning.

There are significant parallels between ecosystems in biology and those in the society (including, but not limited to ones in education) which are summarized in Table 1. First, and perhaps the most important quality of both biological and social ecosystems are their diversity and the fact that despite this diversity they remain interconnected as the ecosystem emerges in a shared way. Second, both biological and social ecosystems develop multiple strategies to nurture or resource themselves. These two traits allow ecosystems to stay resilient and to adapt to varying environmental conditions. Further to that, the success of ecosystems is dependent upon how well various species within them are collaborating with each other, establishing all forms of synergies (i.e., a situation when a total is more than the sum of its parts,  $1+1>2$ ). Certain species will play the role of "integrators" and similarly, social ecosystems require various forms of integration through elements such as platforms and hosting spaces. Finally, as biological ecosystems maximize their capacity through interconnection and circulation of resources, so do social ecosystems that leverage collaboration and co creation by all parties involved.

This comparison allows us to "set up boundaries" of what can or cannot be called an ecosystem based on a normative, or biologically inspired definition. A system is likely not an ecosystem if it has one or more of the following features:

- a system consisting of a single type of actor (no diversity), or it consists of different types of actors, but there is very low or no collaboration between them,
- a system is hierarchically governed by externally defined KPIs/goals, or it constantly requires external organizing efforts,
- a system is highly centralized or is dependent upon a single source of (financial) resources (e.g. government/philanthropic funding), or it has a unifying platform but doesn't have a diverse group of users that actively use it,
- a system evolves towards closure/isolation

For example, a network of schools cannot be considered an ecosystem as there is no diversity of types of actors or relationships. Diversity of actors is mandatory for requisite variety, adaptation, and resilience. This is important to note, as sometimes people perceive an ecosystem as something that can be created by one funder, agency, or network, however if there is not a robust milieu for evolution the system cannot be sustained. Ecosystems can only exist when there are multiple sources of energy, actors, and evolutionary pathways.

Having explored above, in brief, an array of perspectives on ecosystems, including, orientations from Indigenous Wisdom, Traditional Ecological Knowledge, western scientific perspectives, and socio-economic conceptions it is clear that our relationship with and understandings of living ecosystems and places

Ecosystem in Biology	Ecosystem in Society
Diversity of participating species	Diversity of participating actors Decentralized governance
Diversity of food sources (food chains)	Diversity of resources (incl. funding)
Symbiotic relationships	Collaborations (1+1>2)
Hosting species	Integrating solutions (platforms, hubs)
Maximal capacity	Maximal capacity reached by co creative relationship between all actors

**Table 1:** Comparison between biological and socio-economic ecosystems

we call home are not fixed or final, but rather still very much evolving. The above perspectives suggest that perhaps it is time to come together and learn with each other, and from the intelligence of our living world how to learn as ecosystems, and how to lead ecosystemically together with all life; to remember that we are all connected in this evolutionary journey.

# 2.2

## Changing Forms: Defining Learning Ecosystems

In order to understand the emerging praxis of learning ecosystems in education we asked the practitioners, or ecosystem leaders, featured in this report how they define learning ecosystems and how this nascent narrative is, or is not yet, coalescing into a coherent vision that can be acted upon. As researchers we were curious to discover how similar or different emerging definitions are, if people had a shared definition that was referenced across initiatives or if they developed definitions independently. We therefore inquired into both definitions and names such as, educational ecosystems, learning ecosystems or something else entirely. It is natural in an emerging field that the terms are varied, our aim below is to distill out of our research thus far a common thread of understanding.

Examining the responses of learning ecosystem leaders, we found that very few shared an explicit definition of the meaning of an education/learning ecosystem, but instead in their dialogue spoke about elements such as its main qualities, behaviours, values, structures, players and aims. The qualities and attributes shared by leaders, as also outlined in a recent report by the Innovation Unit, are often inspired by and modelled on natural and biological metaphors. In particular they highlight holding a progressively longer term

views, the importance of an organic, dynamic system, as well as embracing the complexity within which we exist.<sup>215</sup>

Unsurprisingly, the common thread throughout the definitions was that our overarching education ecosystem provides a purpose that our learning experiences are required for life. This is important to highlight as it is notably different to 1) other ecosystems which have their own specific focus or are recognised for just being (like the biological ecosystems where purpose is murky at a high level) and 2) what learning and/or education was previously seen to be, which was a foundational point for life, generally with age limits. It seems then that our conception of what learning and education can be has evolved toward a lifelong endeavor and commitment which previously seemed limited to the few, and often privileged.

### “How would you define an (education) (learning) (insert other) ecosystem?”

In exploring how ecosystem leaders today define learning ecosystems they identify three main elements that are integral to their essence of being:



1. **Multifaceted**



2. **Co-created**



3. **Purposeful**

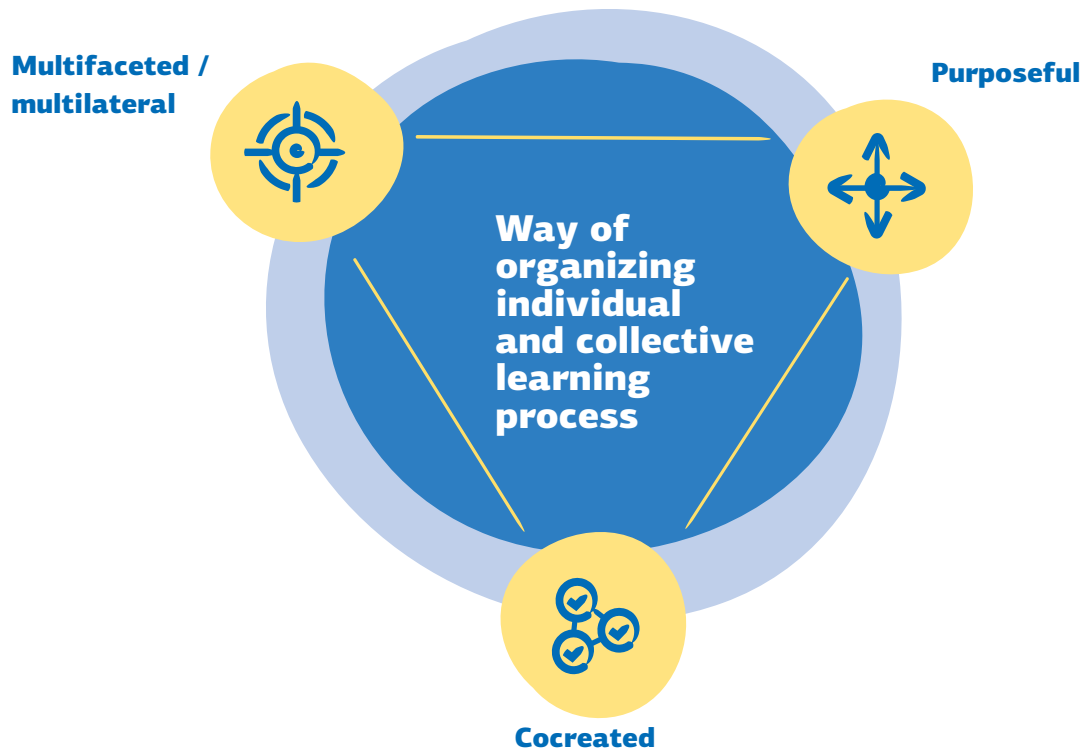
<sup>215</sup> [https://www.wise-qatar.org/app/uploads/2019/05/wise\\_report-rr.1.2019-web.pdf](https://www.wise-qatar.org/app/uploads/2019/05/wise_report-rr.1.2019-web.pdf)

Theme	Elements
Multifaceted	<ul style="list-style-type: none"> <li>Integrates learning with other human activities</li> <li>Combines environment and experience</li> <li>Interdependent</li> <li>Inter-Connected</li> <li>Multilevel</li> <li>Glocal: local &amp; global</li> <li>Many within each other</li> <li>Communities / Networks</li> <li>All/multiple stakeholders</li> </ul>
Co-created	<ul style="list-style-type: none"> <li>Sustainable</li> <li>Pragmatic</li> <li>Inclusive</li> <li>Diverse</li> <li>Addressing multiple demands / intentions</li> <li>Holistic</li> <li>Ethical</li> <li>Relational</li> </ul>
Purposeful	<ul style="list-style-type: none"> <li>Lifelong learning</li> <li>Development and growth</li> <li>Serving individual and collective talent</li> <li>Enabling economic opportunity</li> <li>Enabling inclusivity / equality</li> <li>Addressing local &amp; global challenges</li> <li>Universal wellbeing</li> <li>Conscious evolution</li> <li>Inner &amp; Collective Transformation</li> <li>Higher collective purpose</li> <li>Sacredness of being</li> <li>Joy</li> </ul>

**Table 2.** Aspects of an ecosystem as defined by ecosystemic leaders

Whilst some definitions encompassed various elements identified below, none did all. The research showed that a learning ecosystem was perceived to be multifaceted in a way that is from both a people and process lens, co-created with the values developed and embedded, as well as purposeful, leading us into the realm of also defining what is education and learning.

The first and most common part of defining ecosystems culminates around their multifaceted nature which aligned strongly with the normative definitions and drivers of ecosystems in the previous section. It is in this multifaceted way that interdependent multi stakeholder relationships exhibit diversity as a multilevel, holistic, community centric ways of being. This is a dynamic way of evolving which



**Figure 7.** Three dimensions of a learning ecosystem

has many aspects that must be balanced and developed over time. The necessity of the multi stakeholder actors is truly a central part of what makes a learning ecosystem multifaceted. Whilst previous education systems were more focused on just the school and the children themselves, looking at just a limited number of stakeholders, the limitations of this approach were a defining factor for ecosystem leaders when perceiving what an ecosystem is, compared to what it is not.

One way of describing the range of multiple stakeholders needed in an ecosystems can be to recognize both the “first-liner” and “second-liner” institutions (an example, and not a comprehensive list of all institutions, is provided in Figure 8):

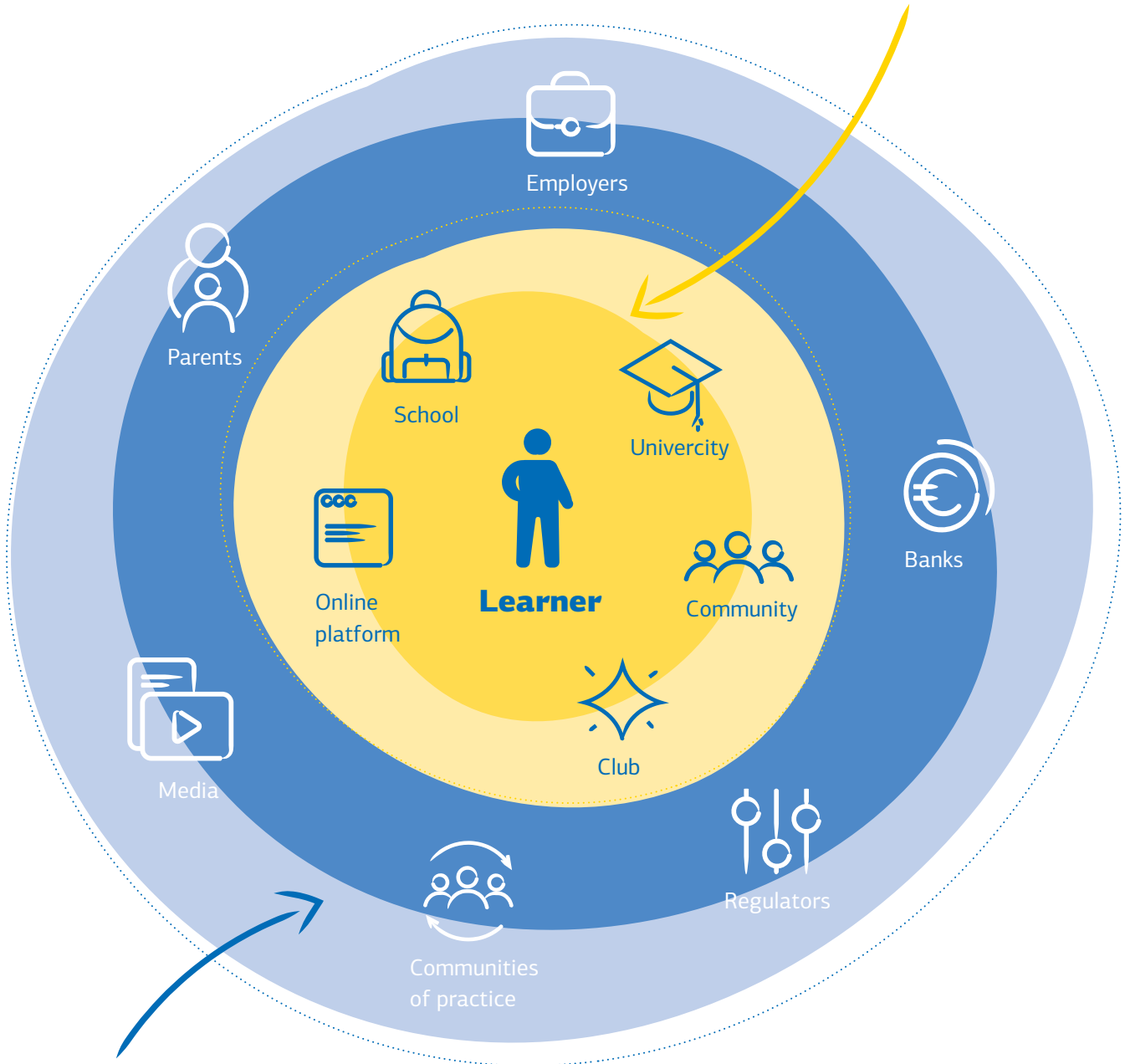
“A learning ecosystem, includes all the key stakeholders: young people, educators, school leaders, employers, government, media, investors etc who are all invested in what I would call a shared purpose, this is different from a shared vision, as this could be different but the purpose of why they’ve come together is the same. Essentially, at a simple level an ecosystem is multiple stakeholders”



**Vishal Talreja,**  
Founder of Dream a Dream



Learner centered system as an interconnected network of learning institutions



Learning ecosystem is shaped by a circle of “influencers” that are actively involved in its development

**Figure 8.** An example of a multi-faceted structure of learner centered ecosystems

- First liner institutions are organizations such as: schools, universities, clubs, museums, communities and other various providers of learning experiences that directly interact with a learner, ideally as an interconnected network, whilst
- Second liner institutions are the “influencers” that set out demands and operating constraints for learning providers, yet do not often engage in providing learning experiences themselves.

It must be remembered that it is not enough to have diverse stakeholder relationships. To move into a multifaceted, ecosystemic dynamic we must foster intentional, interdependent relationships. As in nature, ecosystems are ever changing because of the interdependence of organisms of the same or different species and the nonliving (physical) elements of the environment. Seeking matter and energy resources to sustain life, organisms in an ecosystem interact with one another in complex feeding hierarchies of producers, consumers, and decomposers, which together represent a food web. It seems that a learning ecosystem ultimately does not, and cannot exist without both the interaction and intentionality of connecting when bringing together the inclusive and diverse range of stakeholders required. It is this collaborative nature of bringing well-rounded, complementary skills, knowledge and expertise, as well as resources and much more to connect the dots and operate within the complexity required to support the overall development of education.

Ecosystems which connect deeply at their local level, as well as understanding their work within a global movement and context allow also to see the power of interconnection and potential stakeholder insights and partnerships. This is not only happening at the organisational level

but also at the environmental level, connecting to the things and places required to be multifaceted, such as technology, spaces or tools needed. It is this way of operating and organising with intentional interconnectedness that seems to be one of the crucial differences between the old system approaches and the new ecosystemic ones. When we do not pay attention to these relationships, it seems that we do not allow ourselves to operate in the fullest way possible for becoming and growth.

The second key aspect is co-creation, integral to designing and organising, involving the role of all in learning design from children, to educators to leaders. As we think about education, it is this contextual relationship process that our ecosystem requires to flourish. Whilst previously an extremely siloed sector fed into a belief of a linear progression in life, this no longer mirrors the reality or complexity of our current and future required learning opportunities to thrive. This might be best described as liminal leadership, of which there is no expert but something all of us are and do, points to the necessary collaboration required for mutual learning to co-create an emerging future. Inextricably linked to the future of earth, as shared by Nora Bateson, “advocating for the delicate ecologies of life and humanity is both an active and contemplative practice. Protection goes meta. Protection of me becomes protection of you, and protection of us includes protection of the ecology in which we both breathe.”<sup>217</sup>

The co-creation processes to be truly ecosystemic should also be inclusive, diverse and equitable to the maximum extent possible, and in a sustainable way. This very much mirrors the biological definitions we explored in the previous section, showcasing the balance of regenerative cycles. The learning ecosystem leaders outline the need for use of co-creative roles and leadership, collective knowledge management and collective problem solving. This enables them to act consistently in elabo-

<sup>217</sup> <https://www.kosmosjournal.org/article/liminal-leadership/>



## LRNG

One of the most significant and sophisticated experiments to connect stakeholders across the in-school, out-of-school, and online learning experiences and career opportunities is LRNG<sup>216</sup>. LRNG works with multiple stakeholders, such as the local government, employers, the public library systems, community colleges, or other local partners to open the door to new opportunities for residents and help close work gaps. Major national employers such as Amazon Web Services and Unity Technologies are joining in the effort, assisting in various ways with talent development needs. LRNG's goal is to enable young people to define their purpose and find paths to success. Through partnerships with communities, corporations, educators and young people, LRNG is trying to build an equitable future of talent for the 21st century workplace that no longer leaves youth out because of their zip code. LRNG use an online platform which immerses young people in connected communities of practice and peer groups, guided by learning mentors. It is through rich playlists and curated content that youth earn digital badges that unlock opportunities like micro-scholarships, internships and more – and should ultimately lead to greater career opportunities and improved well-being. In 2018, Southern New Hampshire University and LRNG, two of the largest and most innovative education organizations in the country, merged to build a learning and workforce solution for cities and

employers across the U.S. This shows an intentional, deepening of a relationship bringing together SNHU, a national university committed to expanding access to higher education and transforming lives through flexible and affordable degree pathways with LRNG who curate the experiences, resources, and people needed to transform the way young people access and experience learning. Together, they can use their resources and insights to build a city-based strategy to provide learning and work opportunities for everyone from high school students to working adults. This model is designed to address workforce needs and increase access to learning pathways for middle school-aged students through working adults at little-to-no cost using an urban ecosystem approach that focuses on low-income populations. At a time when many believe higher education inhabits the rigidly defined space between high school and the workforce, they are redefining the boundaries and creating personalized pathways that provide learners opportunities, at the right time, at the right place in their lives. They use online and in person experiences combined into playlists that equip youth with tangible skills and understandings that they can apply in academic and career settings. The LRNG platform enables young people to access both local and national opportunities from their computer, smartphone or tablet. Youth find and pursue their interests with mentors and peers, build new skills and habits wherever and whenever they want.

<sup>216</sup> <https://www.lrng.org/>

rating complex decisions, to perceive opportunities and interests of each team member and to integrate them effectively, to work on a basis of win-win strategy. It enables realization of the value of each participant, to build productive horizontal connections and to create and launch changes on a local and global scale. It requires competencies such as empathy, communicative intelligence, flexibility and negotiability, projecting intelligence, skill to adjust tasks and areas of responsibility with personal expertise, to listen and hear each other, to act wholeheartedly, as well as completely new norms of interaction like equity and trust-based relations.

There is a critical aspect of environmental and sustainable learning within the role of the learning ecosystem. As education is the basis of our personal and collective worldview, lifestyle and way of doing something, the way it affects the student or learner is much more important than the novelty itself. Based on the above mentioned observations and insights from the interviews, a hypothesis arises, that to form advantageous conditions of “living for the greater good” we should foster development of new social scenarios, which replaces artificial inflexible hierarchical systems ruled by thin elites, with low level of personal responsibility and commitment. Then the ecosystem will allow people or communities to correlate their values, intentions and actions with global processes, to understand and accept different individualities and interpersonal relations, cultural and social models. The diversity of their nature is so important in co-creating the whole. We can then see and define our place in the ecosystem, this variety is a progress factor, to create new meanings and ideas at the intersection of different worldviews and action models. It allows many who have been excluded to share and create a place of acknowledgment to previous ignorances and injustices to our land and to fellow people. This requires such competencies

“[Ecosystems] serve for the idea for it being alive and vibrant, so a learning ecosystem definition is a community of people that have diverse roles and perspectives and are coming together to learn towards a common goal. Of course the big difference with the real ecosystem is that people agree to the role, but a natural ecosystem doesn't, so it's crucial for my definition that people are agreeing and working towards a co-created learning goal.

This is what makes learning ecosystem and educational ecosystem different in the sense that it's a group of people working towards a goal of learning process for themselves, or others, of course, as they are all learning towards and providing learning outcomes they've agreed upon. In a pure ecosystem of learning the goal is learning in education which implies group learning as a way of achieving that goal.”



**Victoria Haro,**

Director of Academics at the  
Universidad Del Medio Ambiente

as system thinking, multiculturality, social and ecological intelligence, global mindfulness which consequently we must learn to cultivate together.

The third major aspect that defines a learning ecosystem, particularly compared to other ecosystems, is its purposefulness. The primary purpose defined by ecosystemic leaders was organizing learning, but it was also frequently



## Labatoria Social Medellin

Laboratorio Social Medellín<sup>218</sup> is an ecosystemic experiment in Colombia that brings together leaders from different sectors to explore the city, observe, listen and talk. They seek to co-create strategies for the prevention of youth violence in the city born as a citizen initiative, with the support of the Mayor's Office of Medellín and with the execution of the EAFIT University and the Mi Sangre Foundation. They start from the premise that to change a problem it is necessary to suspend the usual ways of thinking and analyzing it, and make visits in which feeling becomes a key element to understand that we are all part of the system we seek to transform. The work began initially with Mi Sangre, where at different levels they empowered young people as peacebuilders, as well as training teachers, parents and head teachers to develop social and emotional skills. Additionally, outside school they empowered young people to learn more about social entrepre-

neurship intentionally collaborating and connecting with funders and NGOs, as well as the media and universities to be in a state of constant dialogue. There is now a deep and important connection with second line actors, those within the community, such as youtubers or researchers, not just actors directly with youth but other perspectives. They met every 2 weeks and share their learning online, they also meet once a month for a whole afternoon to share examples and making cooking together an integral part of their connection. They've visited places, such as schools, youth offenders prison, cultural initiatives that use hip hop. The approach and dialogue is deliberately very informal and organic, and they take the time to walk through the neighbourhood, talk to their communities, as well as sharing insights on how to learn from the key question of how they can all work together to co-create and reduce violence and empower young people as leaders.

<sup>218</sup> <http://www.laboratoriosocialmed.co/index.html>



“A learning ecosystem is every aspect of the community that enables learning to happen. On a narrow sense when someone is talking about how they learn, they refer to courses/projects etc but they are also just as likely to refer to youtube which also becomes part of our learning ecosystem. An ecosystem is all the parts that create learning environment for an individual. But then the collective learning ecosystem is a broader definition, it’s a learning community, who choose to interact with each other in order to promote learning at every opportunity”



**Stephen Harris,**  
LearnLife

shared that the purpose also relates to other elements such as universal wellbeing, inner and collective transformation, ‘higher’ purpose, development and growth, joy and the importance of raising evolving consciousness collectively. This differs from the normative definitions explored in Section 2.1 as it truly relates to this specific type of ecosystem.

Alexander Laszlo articulates this shift in purpose towards education serving thriving and fostering empathy for a wisdom-based society. It includes the following four integrated dimensions of thriving:



**Intra-Personal:** Inner flourishing, listening to self, cultivating knowledge of self, intuition, empathy, sense of authenticity and aliveness, and ultimately leading a happy, healthy and fulfilling life



**Interpersonal:** conviviality with others, communities, learning with and from each other, engaging in open, considerate, joyful action in order to enable collective wisdom



**Trans-Species:** ecosystemic listening to and acknowledgment of our interdependence and ultimate unity with nature and all living beings, our ability to live and co-evolve with all of the biosphere



**Trans-Generational:** evolutionary, integral, hearing the flow of what was, what is being and becoming, finding ability to play one’s own part in this dance<sup>219</sup>

“An education ecosystem is basically an education that gets to the inner core of personal transformation, it’s not a superficial type of education, not just to acquire skills but to go directly to what is transformative. It’s aiming at an education system that provides education to people that changes them innerly, to discover themselves and their potential, their relationship to other people, nature, obligations they have, joy in sharing things. That type of education would make for a good system.



**Gabriel Camara Cervera**

<sup>219</sup>[https://www.researchgate.net/publication/325132603\\_Education\\_for\\_the\\_future\\_The\\_emerging\\_paradigm\\_of\\_thrivable\\_education](https://www.researchgate.net/publication/325132603_Education_for_the_future_The_emerging_paradigm_of_thrivable_education)

Based on the insights from the literature and drawing upon the definitions shared across the interviews a working definition of learning ecosystems was developed.

**a. Learning ecosystems are webs of interconnected relationships organising lifelong learning.**

**b. They are diverse, dynamic and evolving, connecting learners and**

**community to foster individual and collective capacity.**

**c. They have three purposes, dedicated to co-creating thriving futures for people, places and our planet** (see section 2.3)

Some of the critical changes that the new paradigm encompasses are presented in Table 3.

Industrial Education	Learning Ecosystems
Institution-focused education driven by cognitive learning and passivation of learners (e.g. lecturing or memorizing)	Learner-focused education driven by experience based forms of learning and proactive learner engagement (e.g. project- or play-based learning)
Education prepares learners for professional level	Lifelong learning blended at the personal, social and professional levels
Learning occurs within specialized learning institutions (e.g. schools or colleges)	Learning occurs across networks of specialized and non-specialized learning providers and venues (e.g. workplaces and public spaces)
Learning is organized in a limited number of pre-set “trajectories” through standardized “batches” most often grouped by age and gender	Learning is organized as a personalized learning “journey”, occurring individually and in various “peer” groups
Educational system is often disconnected from the needs of economy and society, driven by its own standards and practices	Learning ecosystem is interconnected with, and co-created by, various stakeholders within the economy and society
Educational system is predominantly governed by national governments	Learning ecosystem is governed through an interaction of intentionally diverse and inclusive local and global stakeholders, including businesses, social movements, local and online communities

**Table 3.** Comparison between industrial and ecosystemic education and learning



## Redes de Tutoría

Over the past 20 years, Redes de Tutoría<sup>220</sup> has sought to transform students and teachers by developing tutorial relationships and harnessing the power of one to one dialogue. Instead, tutees enjoy greater autonomy and choose what interests them most from a selection of inquiry-based projects called 'Temas'. Supported by individualized guidance from the teacher, students build on their prior knowledge with self-directed study. Once their study is completed, students reflect on their learning before presenting their Tema to the class. The presentation not only builds confidence and self-esteem but also creates a shared learning culture within the classroom. Peer learning and mentoring is an essential element of the Redes de Tutoría approach. Students are empowered to be both learners and teachers. Following the completion of Tema, tutees become tutors and are trained to support others who choose to study that topic. Through analogies, examples, and questions, teachers and tutors guide the tutees to find their own answers. Within this pedagogy, the process is more important than the answer and students are often encouraged to try to find more than one solution to a given problem. Students feel valued and more willing to take chances and make

mistakes within the supportive learning community. Another important aspect of Redes de Tutoría is the way that families and the wider community are included within the tutorial networks. As a result of this, school and education have moved into and become part of the local community. One teacher can transform a group of students who, in turn, transform the community. The dynamic has changed and education is more social and available to all. Paradoxically, fringe public schools are becoming the harbingers of change. The event that most ambitiously projected tutorial practices into the public school realm was a visit to a one-room rural middle school by the national Mexican Undersecretary of Education in 2008. Impressed by 21 students indistinctly teaching and learning under the direction of a single teacher, the Undersecretary saw it fit to promote the practice among willing teachers working in similar school situations. Interest in Redes de Tutoría grew rapidly following the release in 2013 of a moving documentary, which demonstrated the power of the Redes de Tutoría approach. Now schools across Mexico have adopted the technique and it has spread to be used in vulnerable communities in South America and Southeast Asia.

<sup>220</sup> <https://redesdetutoria.com/>



“It’s more defined for its features and geometry than a definition by itself , but maybe it could be an environment in which the actors can get the most value, learning and practices and actors can be recognised and the environment, in which at the same time, actors can develop their leadership and scale their vision easily, maybe is for me the difference between an ecosystem and a platform or a program or other things in education.”



**Ismael Palacín,**

Director of Fundacio Jaume Bofill

Whilst this exploration has gone some way in furthering insight across the education ecosystem community on what it is, ultimately it is important to remember that learning ecosystems, as with biological, natural or social ones, can be defined at a given place and/or functional scale but are nested within larger

ones, while also containing smaller ones with which they exchange matter, energy and information. Whilst it is required to map learning ecosystems for co-design, development and growth, this makes their boundaries in many ways difficult to describe and in essence will be ever-changing. We can do our best to define ecosystems but it is not possible, at this stage, to capture or encompass possible learning ecosystems happening within and across each other exactly due to the dynamic nature, within which large quantities of matter, energy and information flow, locally and globally, offline and online, as well as in many ways that are not yet understood or even comprehensible. Learning enables society and culture to evolve, as an environment where people act and live their lives, and through which reality is perceived and constructed. Therefore, when we are defining ecosystems the very least we can do is to encompass the combination of the multiple variants and characteristics that are required for it to truly be an education and learning ecosystem, as opposed to more traditional methods.

# 2.3

## Purpose of Learning Ecosystems

Throughout this research ecosystem leaders Throughout this research project the contributing ecosystem leaders consistently underscored that segmented/siloed approaches to addressing today's complex problems will not work. Many indicated that the negative outcomes of "win/lose" competition, colonization, and economic/cultural imperialism has resulted in the creation of, and reinforcement of systems of inequality and violence that privilege the few and oppress many. For systems to transition toward justice and equity, many of the contributors suggested that we need to both operate within and at the same time go beyond incremental change and find ways to redesign and transform the systems of which we are a part. They recognised that "being in the world is more than living on it, it demands an ecosystemic approach, the construction of a new social fabric, as new structures emerge in the socio-cultural learning niches and develop critical capacities to operate changes in the system."<sup>221</sup> Many of these leaders are motivated to work on ecosystemic projects having begun their work on a singular theme or area in education, for example how to improve life skills for young people, and will create a program or organi-

sation to address this. They often realise that, if they are successful in doing so of course, that whilst this has made some improvement in the world, to have greater impact and improve the lives of more children they need to scale. At [HundrED](#)<sup>222</sup> for example, they highlight many examples of specific innovations in education that are improving education for impact and scale. Across this collection there are innovations at different stages of this journey, yet a much smaller proportion are working ecosystemically to create change. Those who have typically shared their story of evolving and see their work very much as part of the whole, want to understand the interconnection and relationships between their work and how they can improve the ecosystem for all. These goals are very much, "intrinsic" goals with a deep desire to help make the world a better place<sup>223</sup>.

Yet they come up against many difficult challenges, recognising that change depends on sufficient relationships and collective and connective intelligence systemic aspects of organisational change. As recognised by Stephen Sterling in his work<sup>224</sup> on educating for sustainability, significant challenges are understood and accommodated within the norms of the existing system, rather than changing the system to be congruent with the challenge. Complex systems theory, like that researched by Donella Meadows in *Thinking in Systems*, shows us how humans find it particularly difficult to make decisions that decrease output, compared to increasing input<sup>225</sup>. Meadows talks about this through stocks and flows and how we seem to focus more easily on stocks than on flows, particularly what flows in, over what flows out. Let's consider this in relation to her bathtub (Figure 9) and oil examples.

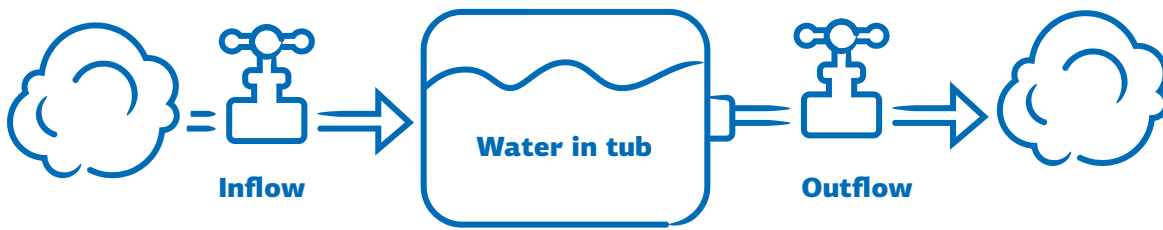
<sup>221</sup> [https://www.researchgate.net/publication/255961837\\_Building\\_a\\_New\\_World\\_An\\_Ecosystemic\\_Approach\\_for\\_Global\\_Change\\_Development\\_Design](https://www.researchgate.net/publication/255961837_Building_a_New_World_An_Ecosystemic_Approach_for_Global_Change_Development_Design)

<sup>222</sup> <https://hundred.org/en>

<sup>223</sup> <https://journals.sagepub.com/doi/10.1177/0146167296223006>

<sup>224</sup> <https://eric.ed.gov/?id=ED464791>

<sup>225</sup> <https://wtf.tw/ref/meadows.pdf>



**Figure 9.** Managing inflows and outflows in a “bathtub” system<sup>226</sup>

“We sometimes miss seeing that we can fill a bathtub not only by increasing the inflow rate, but also by decreasing the outflow rate. Everyone understands that you can prolong the life of an oil based economy by discovering new oil deposits. It seems to be harder to understand that the same result can be achieved by burning less oil. A breakthrough in energy efficiency is equivalent, in its effect on the stock of available oil, to the discovery of a new oil field—although different people profit from it.”

Ecosystem leaders are taking the time to understand this problem and are deeply motivated in addressing it, having usually experienced the problem with the education system themselves in relation to their projects and work, or they are perhaps coming from a systems background. Working on improving learning and education in particular is also another important motivator for our ecosystem leaders: it is recognised that at its best it can develop incredible opportunities, experiences and qualities for a person, such as questioning, innovation and creativity, as well as enabling us to recognize the powerful forces that drive unsustainable living and develop self-confidence and organizational skills<sup>227 228</sup>. What many are experiencing however is that education is often doing the opposite, particularly normalising the acceptance of unsustainable living as being normal;

and passivization of people to wait for others to take action.<sup>229</sup> Our ecosystem leaders realise that the quality of institutions and incentive structures is more critical than the specific individual motivations<sup>230</sup>.

This is particularly important to note as teachers, as well as many others working across the education space are not the ‘issue’ and cannot be “fixed” by looking solely at individual issues. Take teacher dropout, for example, which is often cited as an issue in education. This is not because the teachers are inherently uninterested in education or are seeking monetary gain or reward somewhere else but that they feel totally unmotivated by the effects of the system on the profession itself. This is a symptom of a wider, ‘wicked’ problem across the ecosystem where a lack of time, space etc. has occurred due to a freefall in quantitative metrics required as the ‘top level’ seek to understand why and how children today are learning in relation not only to each other in a local context but also the wider world. Instead of realising that to improve the quality of learning itself teachers need time to build relationships and focus on their own learning growth and development in order to bring this back into their school, we’ve seen an increase in the amount of time required to complete additional tasks given that are disconnected from the above.

<sup>226</sup> <https://wtf.tw/ref/meadows.pdf>

<sup>227</sup> <https://capacitybuildingnetwork.org/article3/>

<sup>228</sup> [https://www.researchgate.net/publication/255961837\\_Building\\_a\\_New\\_World\\_An\\_Ecosystemic\\_Approach\\_for\\_Global\\_Change\\_Development\\_Design](https://www.researchgate.net/publication/255961837_Building_a_New_World_An_Ecosystemic_Approach_for_Global_Change_Development_Design)

<sup>229</sup> [https://www.unece.org/fileadmin/DAM/env/esd/ESD\\_Publications/Competences\\_Publication.pdf](https://www.unece.org/fileadmin/DAM/env/esd/ESD_Publications/Competences_Publication.pdf)

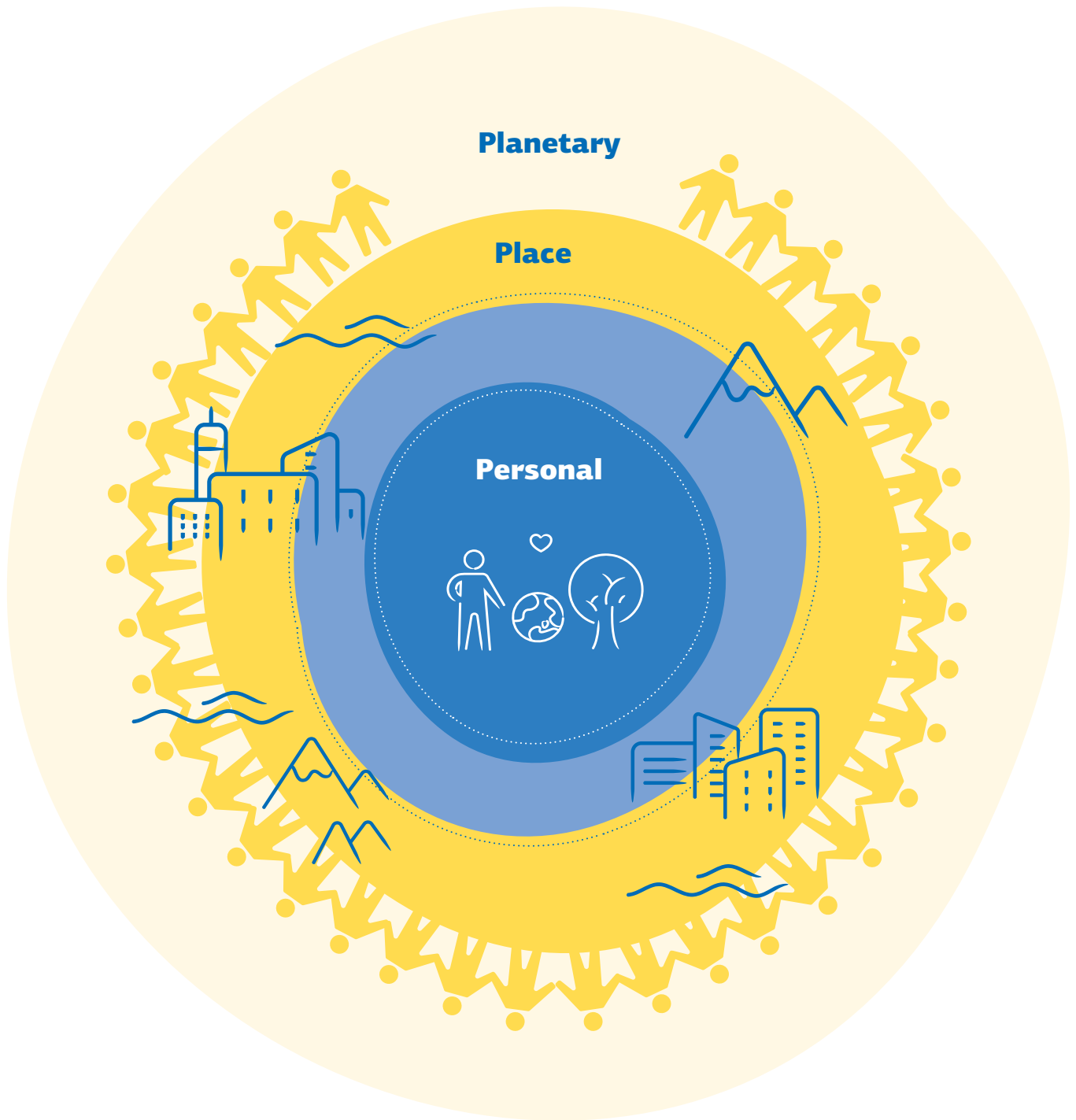
<sup>230</sup> <https://www.oecd.org/site/progresskorea/globalproject/43463081.pdf>

Contributors to this research also recognise that problem solving implies dynamic and complex configurations and are seeking to find optimal ways of doing this at different scales around the world, often integrating an ecosystemic approach not only in education but also in technology, environment, wellbeing, health, politics, business and so on for mutual support

and improvement in a dynamic equilibrium. Considering the responses from our interviews, the education and learning ecosystem seems to provide a multitude of purposes which are applicable at three different levels to incorporate individual and collective needs through: the personal, place and planetary levels. The personal level focuses specifically on improving

Purpose	Elements	
<b>Personal</b>	Personal Self care Personal well being Sustain personal income Connection to community and world Develop unique value	Find purpose and meaning Develop love of lifelong learning Learning outcomes Heart/Head/Hand Develop agency Become changemaker
<b>Place-Based</b>	Foster skills and opportunities Create talent and teams Enable lifelong learning Encourage potential for all Innovation Create changemakers Work collaboratively Collective wellbeing	Provide support Networks of support Healthy democracy Reveal community wisdom Transform local community Achieving group defined learning outcomes
<b>Planetary</b>	Increase systemic changes Create collective capacity for transformation Cultivate consciousness Connective and collective intelligence for collective wisdom & growth Guide development of countries / continents/world Skeleton/nervous system of global civilisation	Cultivate process of healing Universal well being Link together different ways of becoming Harmonize digital & human Recognition of unique purpose and capabilities of humans Improve equity, inclusivity & diversity

**Table 4.** Aspects of Personal, Place-based and Planetary purposes nominated by ecosystemic leaders



**Figure 10.** Personal, Place and Planetary Purposes

aspects such as individual growth and self care, whilst the place focuses on the development of local community and the learning opportunities within it, to be defined within their context, and the planetary focuses on our connection to wider global needs of the world.

In regard to a local or place-based purpose of an ecosystem, the work of ecosystem leaders is primarily driven pragmatically by actual needs, local challenges and opportunities, that are rooted in local or regional context and history. Ecosystems are purposeful, and so their impact has to be self-evident for all key stakeholders: a boost in vocational skills that address the needs of local economy and close the skills gap, a growth in the capacity of teams that are able to create technological innovations and startups, a shift in the mindset of citizens that creates greater community action and reduces the environmental footprint. In order to attract the necessary funding and engage the support of institutions and the public, ecosystemic projects need to deliver value to the majority of their stakeholders. Inherent motivations to organize ecosystemically include:



**1. Immediate motivation.** That working ecosystemically will serve the immediate local issue, a deep need that is seen by their community, industrial partners, economy, requests of population. This need is infinitely rooted in the context and culture of a specific place.



**2. Overarching motivation.** In the inter-connection to a wider planetary movement towards universal wellbeing at the global scale ecosystem leaders see themselves as connected to a part of a larger movement.



**3. Personal motivation.** Their work is also innately connected to them and their development, they want to organize learning and education for themselves so they can live in the world this way.

Adriane Robke's student and consultant at the Network Weavers<sup>231</sup> motivation is clear, believing that

“our current cultures and mindsets endanger life on earth. The challenges we face are highly complex, wicked problems. These problems cannot be solved alone. Collaboration is a must, yet effective collaboration is still too rare. This is my motivation to weave: building bridges so we change the world together.”

And why does he want to specifically do this?

“In short: Because I love life. Like all of it. The challenges, the opportunities, the valleys and mountains. I cannot stand the trajectory that we destroy life on earth. And with it the chance to create and enjoy the beauty that is within and around us. So I take responsibility.

<sup>195</sup> <https://www.spreading-inspiration.com/>

<sup>194</sup> [https://books.google.co.uk/books/about/Mythologies.html?id=wsGDVdYoRA4C&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/Mythologies.html?id=wsGDVdYoRA4C&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

I get courageous. I do what needs to be done to serve Earth Community in this particular point in time.”

These testimonies show in essence the fluidity of the thread between the personal, place and planetary and the clear motivations woven throughout.

Through the above we see the beginnings of a unifying narrative that binds purpose, motivation, and actors within ecosystems together in common cause. The role of unifying narratives, stories, or myths as highlighted by scholars such as Roland Barthes<sup>232</sup> and Joseph Campbell is to shape our collective understanding of the world and our place within it.<sup>233</sup> This applies not only to our ancestral stories but to our modern myths, the stories we believe in today and are motivated by are shaping our society. Yuval Noa Harari explains in *Sapiens* and *Homo Deus* that ideas (or myths) such as “progress”, “free market” and “power of scientific knowledge” unite modern societies in the same way as the belief in God (or gods) united societies of the past. He also suggests that the biggest myth of our time, the idea that unites literally every member of our societies despite our differences, is money. The myth creation has been extensively applied in organizational management and marketing<sup>234</sup> and suggests that storytelling and culture creation is critical in creating shared purpose and aligning shared values.<sup>235</sup> Part of the work therefore of co-creating learning ecosystems is to create new narratives that center the personal, place and planetary purposes.

At the personal level we must find ways to develop our love and ability to learn throughout life, as well as develop our personal capacities and abilities to connect with each other on this mission. If we don’t start with ourselves as learners we lose an opportunity to connect with the essence of an authentic and useful learning opportunity. We see parallels in the field of psychology and neuroscience, for example, where studies on compassion show that self compassion can result in fewer depressive symptoms, less negative emotion, emotional resilience and more positive emotion<sup>236</sup>. There has been a rise in schools, projects and work shifting towards practices built around each person, not around a sample portrait of “standard learner”, as is still typical for formal education<sup>237</sup>. Usually a person is made to fit the standard. This is not aimed to raise awareness of self and others, or to value the differences, working out solutions based on cooperation instead of competition. Moving towards learner centric education enables self directed, more autonomous approaches. It is in this direction that many educators and leaders are utilizing these ways to change the face of education today so it’s unsurprising that this was highlighted as one of the most

“We’re all ingredients in the system so the way in which we are creating the change is critical to the change we are trying to create.”



**Daniel Ford,**  
Forum for the Future

<sup>233</sup> [https://books.google.co.uk/books/about/The\\_Power\\_of\\_Myth.html?id=2GOIguh5GJ4C&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/The_Power_of_Myth.html?id=2GOIguh5GJ4C&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

<sup>234</sup> <https://www.jstor.org/stable/2778293>

<sup>235</sup> [https://belonging.berkeley.edu/notesonaculturalstrategy?mc\\_cid=d2fbc76dd4&mc\\_eid=bd552e09ab](https://belonging.berkeley.edu/notesonaculturalstrategy?mc_cid=d2fbc76dd4&mc_eid=bd552e09ab)

<sup>236</sup> [https://self-compassion.org/wp-content/uploads/2015/12/SC.SE\\_Well-being.pdf](https://self-compassion.org/wp-content/uploads/2015/12/SC.SE_Well-being.pdf)

<sup>237</sup> <https://www.tandfonline.com/doi/abs/10.1080/87567555.2012.752338>

<sup>238</sup> <https://journals.sagepub.com/doi/abs/10.1177/003172170208300806?journalCode=pdka>

<sup>239</sup> [https://www.researchgate.net/profile/Richard\\_Felder/publication/279589632\\_Learning\\_by\\_doing/links/559aa7cb08ae793d13820e03/Learning-by-doing.pdf](https://www.researchgate.net/profile/Richard_Felder/publication/279589632_Learning_by_doing/links/559aa7cb08ae793d13820e03/Learning-by-doing.pdf)

<sup>240</sup> <http://web.mit.edu/jrankin/www/pbl/steele.pdf>

<sup>241</sup> [http://www.outlab.ie/forums/documents/the\\_value\\_of\\_school\\_science\\_review\\_march\\_2006\\_87320\\_141.pdf](http://www.outlab.ie/forums/documents/the_value_of_school_science_review_march_2006_87320_141.pdf)

<sup>242</sup> <http://www.click4it.org/images/a/a8/Graham.pdf>

<sup>243</sup> <http://www.d.umn.edu/~kgilbert/educ5165-731/Readings/experiential-learning-theory.pdf>



## Enrol Yourself

Enrol Yourself organizes Learning Marathons, a 6 month peer-led learning accelerator designed to integrate into life alongside work. It is a space to tackle a specific professional, personal or societal challenge of importance, tackling it as a live project, to add real value to a person's life and/or portfolio. The opportunity consists of a dozen peers who are also working on something that motivates them. Pooling ideas, skills, experience, perspectives and momentum works to create a rich 'soil' that fuels growth. It is an interdisciplinary learning environment, fit for upgrading 21st Century capabilities like collaboration, complex problem solving and continual learning. A host, trained in the Enrol Yourself philosophy and approaches, is there to guide, not to lead and participates alongside trainees through a carefully crafted 6 month Path that provides structure and accountability to keep momentum, whilst harnessing the collective potential of the group. Participants also have access to the wider combined network of the group and associated connections,

and access to Enrol Yourself community activities such as an annual 'Enrol Camp' retreat. Enrol Yourself operates in a decentralised way, training hosts to develop agency and co-facilitation in their methodology, giving them access to their toolkit and resources, then supporting them to take the responsibility and autonomy to start things up in their local area. Their peer-led learning approach relies on ecosystemic principles, there is no one teacher that provides information and participants have to learn to navigate the resources of the peer group. They also partner with other organisations to underpin learning experiences that they wish to initiate or host. They intentionally empower facilitators, coaches, educators and people organizers to be able to host learning journeys wherever they are. They are creating a 'grow your own' lifelong learning system where power is far more distributed and the system as a whole is therefore far more responsive and emergent. In this way they have created a system better suited to the rapid changes that are being brought and will continue to be brought this century.



important purposes of ecosystemic education. Other examples of these pedagogies that strive for deeper learning to facilitate learner centric approaches are: place-based learning<sup>239</sup>, learning-by-doing<sup>239</sup>, student-led learning<sup>240</sup>, outdoor learning<sup>241</sup>, blended learning<sup>242</sup> or experiential learning<sup>243</sup>. Whilst most elements of this approach and pedagogy are not 'new' and have been advocated for at least a century by the likes of Dewey, Piaget, Montessori and Vygotsky, it is their incorporation which moves us towards more learner-centric, ecosystemic learning.

Adults who can both share their learning and learn themselves, becoming more personal to the student, require an increasing diversity of options, coming back to some of the early biomimicry terminology explored when defining what an ecosystem is. Laura Hay, one of our ecosystem leaders working at Ashoka, shares that "the purpose is to create a dynamic and holistic infrastructure for growth and development throughout our lives and provide a more diverse learning experiences too, way more than you could find in the typical classroom." All of which should go beyond that typical "phase of learning, to develop our own sense of need and purpose" further highlighted by Katherine Prince another fellow researcher of education ecosystems at [KnowledgeWorks](https://knowledgeworks.org/)<sup>244</sup>.

The reality of making learning personal in the current state of 30+ students seems difficult and extremely daunting, especially when teachers are tasked with preparing students for standardized tests and set learning outcomes. So, while the positives of personalized education are undeniable, implementation can seem impossible without the right support. As the learning system is in a state of transition [Big Picture Learning](https://hundred.org/en/innovations/big-picture-learning)<sup>245</sup> schools are striving to close the gap between the current reality

above and ecosystemic approaches. They have created, and continue to evolve, a personalized education approach through advisors leading around 15 learners each, whom they form personalized relationships with. Each learner stays in the same advisory for four years, identifying interests, figuring out how they learn best and what motivates them. Parents and families are also actively involved in the process, helping to shape the student's continuation of learning. Secondly, real-world internships are a key part of this approach as the learner and advisor work together to find exciting opportunities best suited to their interest. The result is an increasingly learner-centered experience, where students are actively invested in their learning and feel challenged to pursue their interests by a supportive group of educators, community, experts and family members.

"[the purpose of the ecosystem] depends on the learner, my assumption would be that an ecosystem approach vs traditional would allow for purpose to be more variable dependent on the individual learner, to take pathways according to own needs and purposes. I think this is a better use of resources and to do so inclusively."

At the place-based level we must find ways to develop our connection to each other within our locality, identifying local needs, as well as the ways we can serve them and gain opportunities. When we remain solely insular we are not acting ecosystemically towards supporting the benefit of more equitable, diverse or relational solutions. As shared by Sarason, "Learning is a process that takes place in an interpersonal context, in which powerful factors like motivation, understanding, affection, reflection and the like, are always present. Of the many factors that intervene and modify the process, the strength of willing to learn may well be the most fateful."<sup>246</sup> At the place based level too it is important to recognise that, as

<sup>244</sup> <https://knowledgeworks.org/>

<sup>245</sup> <https://hundred.org/en/innovations/big-picture-learning>

<sup>246</sup> [http://www.daneshnamehicsa.ir/userfiles/file/Resources/5-1\)%20Change/INTRO\\_%20Revisiting%20The%20Culture%20of%20the%20School.pdf](http://www.daneshnamehicsa.ir/userfiles/file/Resources/5-1)%20Change/INTRO_%20Revisiting%20The%20Culture%20of%20the%20School.pdf)

Vishal Talreja shares “each ecosystem can define its own shared purpose. It’s important that the ecosystem defines it so the shared accountability comes in.” Previously, education systems have been defined at a top level and led by predominantly higher level institutions or governments, as opposed to allowing for greater autonomy whilst joining and sharing a wider set of ecosystemic principles at the place-based level. There has been a rise in Place-Based education which is rooted in seeing the local place as the classroom which can nourish and feed both the leader and the community. Skill development is rooted in aspects like inquiry-based and design thinking development as learners see local needs and are able to work collectively and intentionally to solve them together in real-world scenarios.<sup>247</sup>

With this notable recognition of our developing a connection to place, we start to see projects developing on the micro level that allow for greater learning outside the classroom reconnecting back to the city, nature and beyond. An example of this would be [Seppo](https://seppo.io/en/) a platform originating in Finland<sup>248</sup>, which gets children excited about learning through games in the real world while developing group work skills, media literacy, critical thinking, and digital storytelling. The teacher can set the game in or out of the classroom, usually going out into the city centre, parks or even a museum. The teacher communicates with the students using Seppo and follow them on a map using GPS enabling physical activity as part of the learning experience. The idea for Seppo was born when high school history teacher Riku Alkio was visiting Rome on a field trip with his students. The students created “Amazing Race Church Edition” which took them to churches all around Rome. When the students were given time off, instead of shopping and visiting cafés

the students headed back to the churches — to learn more. Whilst this game itself is not transforming the ecosystem at a high level, it is a clear example of ways at the individual and local level learning can instantly hold greater purpose and transcend traditional educational boundaries of the classroom into the real-world. As Jean Boulton points out that, “change really only happens locally... therefore it is necessary to familiarize the learner with the connections that are most local, or proximate, to the learner. This provides the learner with an opportunity to connect what is meaningful to them to that which it is dependent upon.”<sup>249</sup>

“The purpose of the learning ecosystem is that everyone can and should think of themselves as a learner and educator, to add value to each other. The purpose would be to reveal all the amazing knowledge, wisdom and abilities in a community and find a way to connect and learn from each other. That you don’t have to have a PhD or be an ‘expert’ to offer something to a learning ecosystem. Just like a natural ecosystem, an ant is just as important and we need to recognise that we all play a critical role.”



**Joshua Schachter**,  
Founder of Community Share

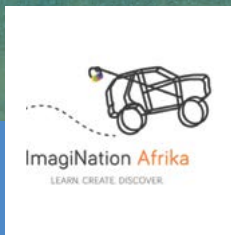
The purpose of a learning ecosystem is also to unite networked stakeholders in an evolving process of learning and positive development that supports us to create desired futures at an individual, collective and systemic level, connecting to our planet. Educators are increasingly more aware of their pivotal role in connecting character development<sup>250</sup> to individual wellbeing; to the values, attitudes and wellbeing of the societies in which we live and to the wellbeing of other species and our planet. It is a state of going with the flow rather than against it, that each element of personal, place-

<sup>247</sup> <https://www.gettingsmart.com/wp-content/uploads/2017/02/What-is-Place-Based-Education-and-Why-Does-it-Matter-3.pdf>

<sup>248</sup> <https://seppo.io/en/>

<sup>249</sup> [https://books.google.co.uk/books/about/Embracing\\_Complexity.html?id=YlUbCgAAQBAJ&printsec=frontcover&source=qp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/Embracing_Complexity.html?id=YlUbCgAAQBAJ&printsec=frontcover&source=qp_read_button&redir_esc=y#v=onepage&q&f=false)

<sup>250</sup> <https://journals.sagepub.com/doi/>



## ImagNation Afrika

Since 2007 **ImagNation Afrika** has developed programs which have expanded paradigms around learning, around play, and around what African child-centered spaces look and feel like. They do this through exhibitions, programs and playspaces, promoting a culture of critical thinking and how children perceive themselves and their abilities to contribute to the economic and social well-being of their culture and context. The organization's core values of thinking globally and acting locally have allowed it, in conjunction with local partners, to create and maintain spaces that spark imagination through activities and hands-on learning for more than 8,000 children. They create tools and training through a center for the dissemination of parenting and teacher resources and research, particularly for babies and young children engaging the cultural and social factors that support positive parenting reinforces positive child development. Through design and products they model how public spaces

may become informal learning centers for children in an effort to support and build the capacity of other public spaces to address and include children. Imagination Afrika also believes that the environment is the third teacher, and that public spaces play a role in a child's development and promote the use of authentic and natural materials that reflect and validate the world of children. They are committed to advocacy and communications by partnering with leaders in education, health, nutrition, and media to become advocates for child development and children's rights to play and thrive, as well as actively creating and sharing ecosystems by facilitating connections between local, regional and global partners to support mutual learning, mentoring and practice. They have weaved together multiple aspects to improve lives at the individual and collective level, whilst holding the thread of the planetary connection at the heart too through partnerships and programs which all learn and feed into each other, from the practical design to the media spheres.



## OpEPA

Luis Camargo, Founder of **OpEPA**<sup>251</sup> in Colombia, over 20 years ago started reconnecting children and youth to nature one on one. He thought this was the most powerful way to transform individuals. After several years and 100,000 students it was evident, if they wanted to scale they needed a different approach. They looked into nature and realized the main reason for wealth, resilience and adaptability in nature came from the interactions and interdependencies that defined the ecosystems. Recognizing this made them start taking an ecosystemic approach focusing on the interjection of individual change and learning ecosystems; with this expanding the concept of environmental education into a holistic nature-based approach to educational transformation. This purpose responds to the ecological planetary crisis. OpEPA's mission is to reconnect children and youth with the Earth so that they act in an environmentally sustainable manner. Through this reconnection, children and youth may become agents in reducing environmental degradation and promoting a more sustainable generation of decision makers. OpEPA has promoted the Children and Nature Movement focusing on breaking the cycle that produces Nature Deficit Disorder. Whilst OpEPA cannot bring all of Colombia's urban youth into nature, instead they bring nature to Colombia's youth. Through agreements with local districts, there are direct services, interactive on campus and off campus classes for students taught by OpEPA staff, as

well as reaching the entire system of science education with teacher training and easy-to-use manuals that help educators make in-school learning more relevant to their students' daily lives. OpEPA supplements better teaching with easy access to nature and has created the "eco-bus," a fleet of traveling science and nature study centers parked in school lots throughout Colombia. They combine simple science tools of the eco-bus with pristine nature and trained professionals to facilitate the learning process. While partnerships with public districts have proven effective so far, Luis Alberto taps into Vicky Colbert's network of hundreds of progressive **Escuela Nueva**<sup>252</sup> schools to accelerate his spread throughout Colombia. There is also an excursion component to this work, trips that can take many forms, ranging from a day to a month in length and from simple hikes to intense wilderness experiences. But they all share one common tie, a pedagogical method that draws deep ties between participants and the world around them. OpEPA staff work closely with youth to examine nature while simultaneously questioning their everyday interactions with the environment and their place in the world's ecosystem. These experiences ultimately aim to produce what Luis calls the "magic moment," when a young person is suddenly and profoundly struck by a new sense of his or her role in nature and society. Participants break existing paradigms and simultaneously create space for new and lasting paradigms to form.

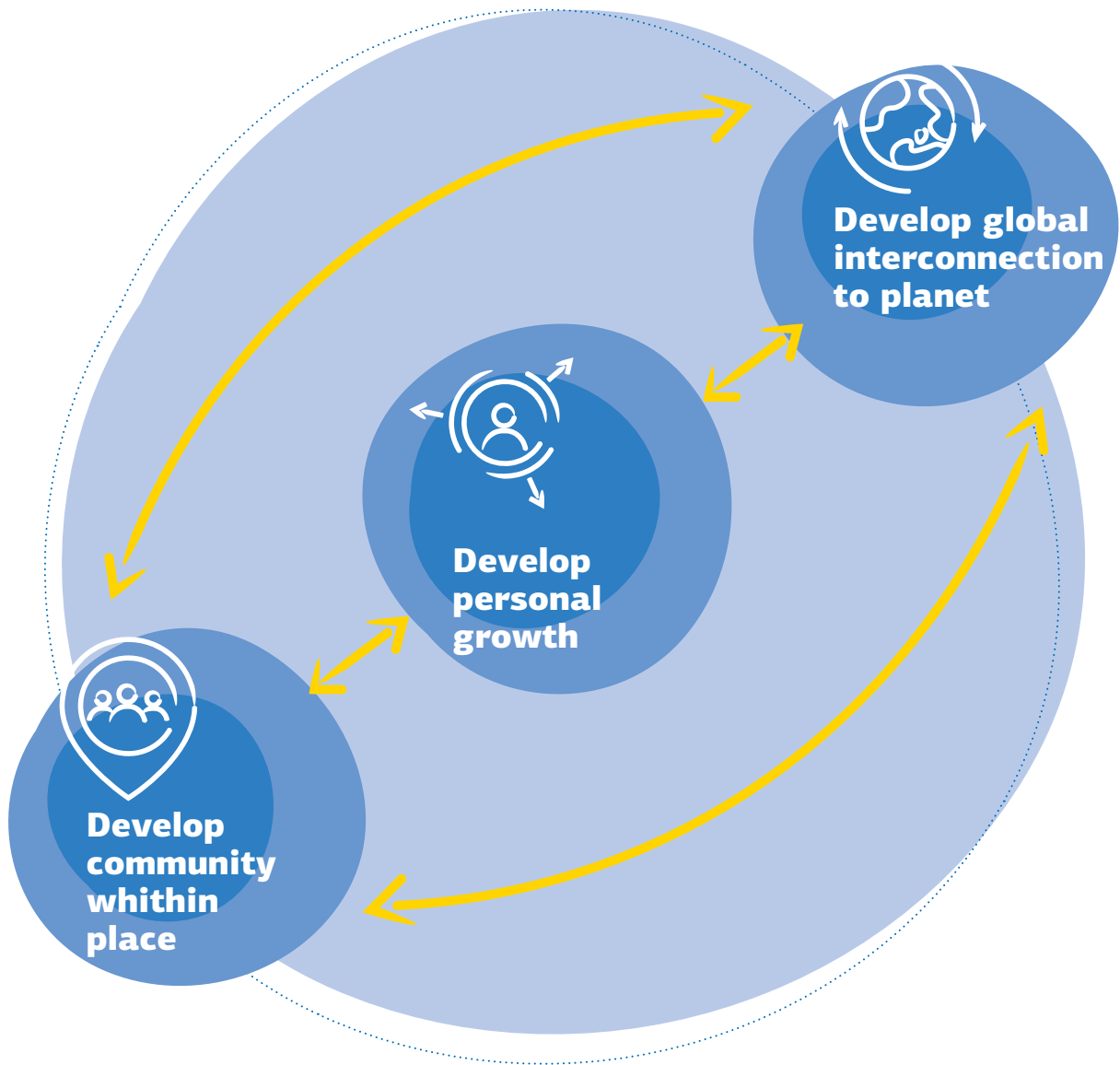
<sup>251</sup> <https://opepa.org/>

Whether classroom- or wilderness-based, OpEPA's environmental education programs begin by sparking a connection between young people and nature. Luis Alberto sees that this interest can only be sustained through concrete opportunities for action, but he also recognizes that providing these opportunities is not OpEPA's core competency. So OpEPA draws on a menu of follow-up programs created by other organizations, each giving young people leadership roles and the chance to take the initiative in improving the environment around them. He has, for example, established partnerships with Eco-Clubs program and the Australian Clean-up-the-World Campaign to provide OpEPA participants the opportunity to put their environmental leadership to practice. Bertolini has trained OpEPA staff to manage and guide youth through the creation and execution of their own environmental ventures while OpEPA has engaged young leaders in their own initiatives by launching Colombia's arm of the Clean-up-the-World Campaign. These three major components of OpEPA's work education, excursions, and action allow development at the personal, place and planetary levels of the ecosystem. There is also a focus on equity, as OpEPA works in all types of school districts, including affluent, and plan outdoor adventures for groups with mixed socioeconomic backgrounds.

based and planetary wellbeing is wholly interconnected and interdependent. As a response we see a rise in projects that either directly focus on improving our connection to nature or are deliberately incorporating ways to be more regenerative and reflect the laws of the natural ecosystems.

Whilst the three purposes help us to envisage the particular aspects that are important at these levels, it is also important to note that they are still extremely loose boundaries (Figure 11). As an individual we might be able to consider our personal growth at the centre, for example a child or a facilitator, but the development of our local, community, place-based ecosystem alongside the global community and connection to planetary needs all feed into each other simultaneously. What is useful about this framing is that it highlights the purpose of the ecosystem often lies in its ability to interact at the boundaries of ourselves, interconnected and interdependent at multiple levels. To explore an exercise using our PPP tool go to Appendix 3 to map your own learning ecosystem and the relationships between these three levels.

Whilst not everyone we interviewed may have used the specific categorisation of personal, place and planetary levels, these three critical levels are referenced as key levels that were addressed as key to the purpose of an ecosystem. That to only think or focus on one or two is not truly ecosystemic, even if stakeholders are working together towards improving learning. They might be closer to ecosystemic ways of working, but it does not fully encompass the aspect and purpose of it as a whole. The connection between these aspects allow it to act as a 'self evolving organism' as long as we acknowledge the interconnect-edness and its influence "by empowering all actors that they are part of it and can improve together" shares Zineb Mouhyi from WISE. Increasing interconnectedness and its influence at a personal, place and planetary level requires truly ecosystemic approaches.



**Figure 11.** Interaction between the three levels of personal, place and planetary purposes

“I think it’s [purpose] is an urgent need to create or grow learning ecosystems which have a specific focus on empowering everyone in that ecosystem to live for universal wellbeing. An ecosystem for me can start at the smallest level, an individual person’s learning ecosystem and everyone has one. My learning ecosystems are, for example, parents, peers, religious leaders and teachers, school admins, policy makers etc. not just those who directly influence but those also at the backend too, the indirect influences. I think the urgent need we now have as a species and a planet is to draw attention to these learning ecosystems, at the smallest level locally up to global. The learning ecosystems are nested within each other and overlapping and might overlap if we share the same friends/leaders etc. My conviction is that we need to draw out and draw attention to and strengthen these learning ecosystems for every individual so we all have the best possible chance of having learning experiences through which they become empowered to live for universal wellbeing. This nested idea of personal wellbeing, which means my physical well being/ mental wellbeing and my spiritual and emotional wellbeing and then above that is societal well being, such as social relations, work, money, economy, political and then above that is planetary wellbeing, for example other

species, soil, air, water, wellbeing of climate. The idea is that to optimise this complex idea of universal wellbeing you need everybody to make their best contribution to optimise it, so people need to be aware of and equipped and inclined to do that.”



**Ross Hall,**  
The Weaving Lab

“Healing is my first thought for the ecosystems purpose. It currently has radically fragmented knowledge, culture, communities and ecosystems that we need to be entering into a phase of recognising the unique purpose and capabilities of humans, given the existential threat of automation that is looming large on every horizon. It is time for us to really consider how it is that we are cultivating our own abilities and the processes of healing which requires a more integrated mind and how we can be regenerating the health systems which have been radically disintegrated. We have all kinds of needs for our larger context, healthy systems, participatory and comprehensive as thinkers, designers and participants to heal systems which lend themselves to optimal functioning and potential” ■



**David McConville,**  
Buckminster Fuller Institute

# REMIXING OLD and NEW

LONG TERM SUCCESS





# 3

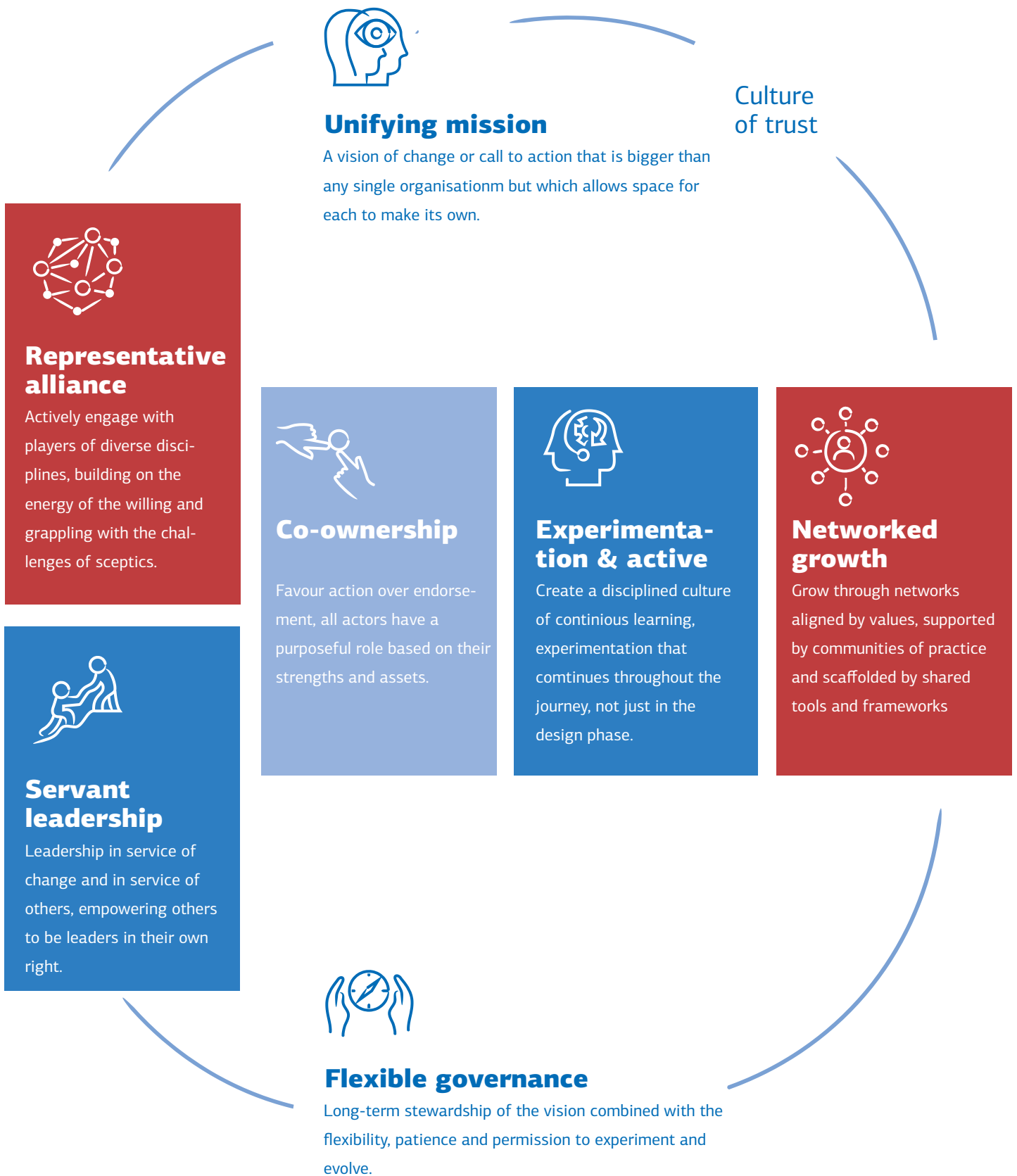
## Conditions for Ecosystemic Learning

What follows in this section is an exploration of the enabling conditions, or enabling elements, that contributors to this research highlighted as supportive to the co-creation of learning ecosystems. This is then partnered with an overview of some of the hindrances, or barriers, they as practitioners have faced with their work. This section focuses on contributors practices and experiences specifically rather than on a wider interrogation of the systemic structures across societal domains that are being explored via, for example, approaches to [systems change and deep equity work](#)<sup>253</sup> or [future-fit ecosystemic practices](#)\*. The work and reflections highlighted below point to the possibility of linking research agendas and/or initiatives that explore and delve deeper into the diverse leverage points

for change and transformation within society at-large. Connecting the dots between the enablers and hindrances that support learning ecosystems to flourish, as outlined below, with the broader aims of systemic and societal transformation, as outlined by the work of practitioners featured in the Global Education Futures 2018 report 'Educational Ecosystems For Social Transformation' is a next step that can be taken to increase the probability that learning ecosystems are a source of, and are connected to change and evolution in society more broadly. The emphasis in what follows is on identifying places to engage that go beyond short term fixes toward long term shifts in how we learn together.

<sup>253</sup><https://changeelemental.org/resources/systems-change-and-deep-equity-monograph/>

\*[https://www.researchgate.net/publication/340292714\\_Evolutionary\\_Learning\\_Ecosystems\\_for\\_Thrivable\\_Futures\\_Crafting\\_and\\_Curating\\_the\\_Conditions\\_for\\_Future-Fit\\_Education](https://www.researchgate.net/publication/340292714_Evolutionary_Learning_Ecosystems_for_Thrivable_Futures_Crafting_and_Curating_the_Conditions_for_Future-Fit_Education)



**Figure 12.** Summarizing the Big Change model in reimagining education<sup>254</sup>

<sup>254</sup> <https://www.big-change.org/reimagining-education/>

# 3.1

## Enablers

Big Change, a charitable trust supporting changemaker communities in education, recently supported the release of Innovation Unit's [Reimagine Education Together](#) research, exploring the conditions which do enable education ecosystems. They recognise, based on a number of case studies, the vitality of multiple stakeholders being invested in and part of the learning process as a primary starting point, but also that it must include a broader set of outcomes which share many different projects that demonstrate ecosystemic qualities. These are outlined as its: transformational purpose, long-term success, collective responsibility, agency, empowering local action, ongoing learning and support, governance as facilitators, and a commitment to ongoing development through review, adaptation and scale. It is a balancing of individual and collective requirements of personal and community development projects within the context of new forms of leadership and reaching more people in doing so.

We see a lot of these critical components reflected in our ecosystem leaders insights. The four main factors which arose through the interviews can be categorised as the foundation or the **CORE** for ecosystemic projects. This stands for: Culture, Organisation, Resources and Execution. The sub-categories of which can be further broken down within the table below.

Culture was highlighted as vital for learning and education ecosystems enabling. Even with all other elements present, it is culture that holds the “essence” of ecosystemic projects,

as compared to projects organized in other paradigms. Based on respondents insights culture in this context reflects values, beliefs and attitudes, environment, rituals and rhythms, and relationships. The values shared by our ecosystem leaders can be woven into a kind of cultural manifesto of enabling conditions.

The culture of our ecosystem should enable continuous opportunities for improvement and change, in a way that is disruptive and adaptable to support creativity and innovation. This in turn builds capacity, resilience and an appetite for growth. Yet, this should be balanced with iterative learning and additive change, ensuring sustainable development to support efficiency and accountability in new ways so there is still a clear sense of solidarity alongside flexibility, remixing the old with the new. The culture should infuse sensitivity and pleasure, energising and stimulating all in intellectually challenging, active and social ways whilst remaining true and alert to place and context. It is also critical in this process of development we become more inclusive and diverse, interdependent and open, which will require a growing consciousness and mindset shift, building trust and deep relationships, building shared purpose as we become increasingly participatory with all stakeholders in the

“One of the most fundamental aspects is the discussion about the purpose and what we’re trying to do. It centres the discussion to whatever the north star is. I have my own definition and most people I imagine is fairly similar but up to the individuals in the localities to have those discussions themselves. It clarifies and empowers everybody who are actors in that locality to be part of the process”



**Sean Slade,**  
ASCD

Enabler	Clarifying questions	Elements
<b>Culture</b>	What are the cultural factors such as values & key principles support the ecosystemic patterns of behavior and organization?	Values Beliefs Stories & Myths Rituals & Rhythms Relationship & Communication Norms
<b>Organizational Protocols &amp; Structures</b>	What are the protocols, organizational structures and agreements that enable the development of the ecosystem?	Local contexts Key stakeholders Ecosystem governance models Distributed leadership Agency/Personalisation Feedback loops
<b>Resources</b>	What are the critical resources of the project?	Funding Space Tools/Equipment Technology Team/People Skills/Capacity
<b>Execution</b>	Which methods and practices help execute the project in ecosystemic way?	Inclusive Planning/Design Prototyping Collaboration / Co Creation Action Oriented Research Engaging Storytelling

**Table 5.** CORE enablers of learning ecosystems as identified by ecosystem leaders

community bringing visibility and ownership to this positive, interwoven transformation.

What are the enabling organisational principles that support culture building and beyond in this ecosystemic context? Ecosystem leaders share that this requires a shift to enable lifelong learning rather than fractured learning and to actively build in processes for greater agency and personalisation, as well as distributed leadership within the local and global context. The qualities and principles behind and within the organising, alongside a deliberate approach

to communication is critical. This reflects the power of the collective, no longer affording leaving social engagement up to chance. The qualities of organisation highlight the importance of hyperlocalism and cultivating a local identity to understand how all spaces in a region work together to support learning and development consciously. This may seem in contrast to their mission in expanding education to involve multiple components and an opportunity to learn at different paces but in this new paradigm the city or locality becomes a living lab of change. All of this progression is and

“Establishing an effective culture and set of working practices is really important — one of high trust, openness, co-leadership and ownership, where experimentation is valued, and successes are jointly shared. Cultivating that sense of common mission and purpose which drives the work forwards, especially given the sustained level of energy required over often a long period of time. Developing ecosystems is labour intensive, and poor culture can stymie, frustrate and drain energy and motivation.”



**Rosie Clayton,**  
Cities of Learning, RSA

“We make sure we find an exciting way to convene! When we share we make it fun and exciting and different. We find new ways for those to key actors to connect from a different level, as well as to understand and have an opportunity for personal transformation and learn from a different place from the inside out”



**Catalina Cockduque,**  
Mi Sangre

should sit within the development of current systemic structures, evolving and practicing ecosystemic and complex systems regenerative design and thinking, such as the work of Gregory Bateson<sup>255</sup>, Buckminster Fuller<sup>256</sup> and their modern followers such as Daniel Wahl<sup>257</sup>, and Joe Brewer<sup>258</sup>.

On the practical level of resources, it requires funding, people with skills and capacity at the individual and collective levels, space to do it, and the right technology, with tools and equipment being key. Ecosystem leaders in particular strongly highlighted the importance of flexible funding, moving towards a more collaborative, non-competitive mode which moves towards new metrics and long-term visioning. While the committed, long-term, and flexible funding can be a dream for many, in reality it is very uncommon. Many ecosystem projects have to instead rely upon a mixed stream of funding that comes from multiple sources and addresses multiple goals of many stakeholders. Even though it becomes an additional challenge for the leadership team to align the interests of these various funders, it also becomes a way of integrating the plurality of forces into a co-creating community within an ecosystem.

From the funder perspective (as well as from the standpoint of other critical stakeholders) it is important that the ecosystemic project defines, measures, analyzes, and works on improving its “metrics of success”. However, it is important that these metrics are representative of the multifaceted multi-stakeholder nature of the ecosystem — and also take into consideration the immediate benefits as well as longer term impact on the ecosystem. There is a tendency of short term or narrowly defined metrics to distort and even destroy the ecosystemic nature of otherwise comprehensive projects — and this is a risk to be taken into consideration. Both the success measurement and the ecosystem “business models” require further deep exploration beyond the scope of this research.

<sup>255</sup> [https://books.google.co.uk/books/about/Steps\\_to\\_an\\_Ecology\\_of\\_Mind.html?id=HewJbnQmn1gC&printsec=frontcover&source=kp\\_read\\_button&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books/about/Steps_to_an_Ecology_of_Mind.html?id=HewJbnQmn1gC&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false)

<sup>256</sup> <https://www.bfi.org/>

<sup>257</sup> <https://www.danielchristianwahl.com/>

<sup>258</sup> <https://evolution-institute.org/profile/joseph-brewer/>



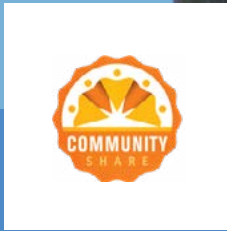
## Community Schools network

The Coalition for **Community Schools network**<sup>261</sup> has organized resources ecosystemically, establishing the model of a community school which is both a place and a set of partnerships between the school and other community resources. Its integrated focus on academics, health and social services, youth and community development and community engagement leads to improved student learning, stronger families and healthier communities. Community schools offer a personalized curriculum that emphasizes real-world learning and community problem-solving. Schools become centers of the community and are open to everyone — all day, every day, including evenings and weekends. This is a deeply ecosystemic approach to education, using public schools as hubs. Community schools bring together many partners to offer a range of supports and opportunities to children, youth, families and communities. Partners work to achieve these results: Children are ready to enter school;

students attend school consistently; students are actively involved in learning and their community; families are increasingly involved with their children's education; schools are engaged with families and communities; students succeed academically; students are healthy — physically, socially, and emotionally; students live and learn in a safe, supportive, and stable environment, and communities are desirable places to live. Most people think of schools today as serving a single purpose: a binary, analog-system of delivery — teachers teach and students learn. Community schools are more akin to smart phones. Schools and communities connect, collaborate, and create. Children and families have an array of support from community partners right at their school. Communities and schools leverage their shared physical and human assets to help kids succeed. Community schools contain a host of opportunities and supports built-in that give students and parents all the tools they need to learn and grow.<sup>262</sup>

<sup>261</sup> [http://www.communityschools.org/aboutschools/national\\_models.aspx](http://www.communityschools.org/aboutschools/national_models.aspx)

<sup>262</sup> [http://www.communityschools.org/aboutschools/what\\_is\\_a\\_community\\_school.aspx](http://www.communityschools.org/aboutschools/what_is_a_community_school.aspx)



## CommunityShare

Joshua Schachter, in Arizona, connects to place with his platform **CommunityShare** which transforms cities into human libraries through an online platform and offline relationships that connect local community expertise and knowledge to real-world learning experiences with students and teachers. CommunityShare has connected over 10,000 students and teachers with community partners who have served as volunteer mentors, project collaborators, guest speakers, and more. It is an innovative, research-based model which includes two key components: an online “matching” platform and “offline” education programming. CommunityShare’s online platform serves as a human library of regional wisdom and expertise, or as the Christian Science Monitor recently described, a “Craigslislist for public education.” Community members, including artists, scientists, parents, retirees, and business leaders register and create online profiles to indicate the

expertise that they would like to share with teachers and students. Classroom educators then search online for community members whose real-world expertise matches the needs and interests of their students and the goals of their curriculum. Community members matched with classrooms can serve as volunteer mentors, project collaborators, content area experts, internship hosts, guest speakers, and more. The offline programme element helps schools and communities build a culture and practice of community-engaged, real-world learning. They offer educator-driven professional development workshops, school-based artist residencies, grants to support innovative school and community partnerships, facilitated professional learning communities for visionary educators, and multimedia storytelling workshops that celebrate the impact of real-world learning.







## RSA, City & Guilds and Cities of Learning

The RSA<sup>263</sup> and City & Guilds<sup>264</sup>'s Cities of Learning<sup>265</sup> programme is an ecosystemic model for cities and places to design and deliver lifelong learning and skills in a way that allows them to be guided by the needs of their local economies and people. Cities of Learning connects and amplifies different forms of formal and informal learning and training provision that exist across a place, and creates valuable new progression pathways for learners into further learning, employment or civic opportunities via a system of digital open badges. The model addresses skills gaps, talent pipelines, and provides a framework for effective place-based initiatives to facilitate economic growth as well as strengthen civic pride and identity. The Cities of Learning model is orientated around three key design principles: new local civic leadership with a collective vision for learning and skills; mobilising diverse networks of learning and skills providers, and connecting different learning opportunities via open badges and a digital online platform. The platform is underpinned by the concept of a 'learning spine' which provides a scaffold for structuring place based learning across different providers, and forms the foundation for new badge-based learning pathways. It also provides a new, common language for

learning and skills progression. Data-driven tools in the platform capture and provide insights on the development of learners' knowledge, skills and capabilities, and the impact of learning and progression, allowing city leaders, employers and education providers to better address local social, civic and economic needs and promote lifelong learning. Open badges can be issued by a range of stakeholders across a locality, and enable the recognition of learning and skills to respond to local priorities and labour market needs. In 2017 the RSA and City & Guilds collaborated with Greater Manchester, Brighton and Plymouth to test and prototype the Cities of Learning approach. Support from Further Education Trust for Leadership, Ufi Charitable Trust and City & Guilds has allowed the RSA to continue its work with Plymouth and Brighton to roll out pilots and evaluate the approach over 2019/20. These first pilots will be targeted at 14 to 25 years olds. Plymouth is building pathways around its strong and entrepreneurial civic, social enterprise, and STEM sectors. In Brighton, Our Future City, which combines culture, arts, enterprise, education, community and public leadership, is a leader in pathways design across the learning network.

There is also an evolved sense of roles/people involved such as facilitators or weavers who will be explored more deeply in a later section of relationships and ecosystem leaders. This is something which extends beyond the realm of what we have previously perceived as ‘education’ as we recognize that learning is something which happens everywhere, for all of us. This shift shows that we need to find ways to collaborate in multilayered and multi-faceted way highlighted in the definition. This shift in mindset contributes to the evolution of how, what, and where we learn. Not only are our approaches to learning evolving but so to are our tools and learning technologies evolving such as Kumu<sup>259</sup> for ecosystem mapping or Play Verto<sup>260</sup> for easy, playful feedback surveys.

With so much at stake, balancing the multi-layeredness of ecosystem enablers it’s critical that we also pay attention to the way this is executed, exploring the role of reflection and feedback, particularly collective embodiment of these practices and storytelling. We must continue to find ways and share how we can:

- 1. Embody the CORE at the personal level**
- 2. Co-create and shape the CORE at the place-based level**
- 3. Align the CORE to our wider planetary needs**

“Within the new roles we need an entrepreneurial mindset but with open, fresh, new ways of creating partnerships that are interdependent”



**Valerie Hannon,**  
Innovation Unit

“We actually believe that a thriving ecosystem is an ecosystem that really supports children’s learning and development. We do look to see change in cultural spaces, ones that are better able to develop programs, spaces and pedagogical materials that support and take into account children, for example when planning transport and design, how can all these spaces really work together to really support learning and development consciously? It’s really that shift of becoming conscious of our impact. So many of us think “I’m not in education so I’m not part of an educational system” but when you say “We’re a learning ecosystem and research shows that we are constantly learning, from 0-5 and 0-3.” We know our environment and experiences have the number 1 impact on our brains. So how do we as society break these down and ensure everyone is accountable?”



**Karima Grant,**  
Founder of ImagiNation Africa

<sup>259</sup> <https://kumu.io/>

<sup>260</sup> <https://www.playverto.com/>

## METTA-LEARNING

**METTA-LEARNING**<sup>266</sup> is an Argentinian learning ecosystem project founded by Vivir Agradecidos as a think, link and do tank with a vision to create a more stable and peaceful learning environment in which students and teachers unfold their full potential for the good of all. The mission is to foster trust in life, human dignity, grateful living and wellbeing in community in the education sector. The think aspect focuses on generating scientific research to evolve and develop the vision. They work transdisciplinarily particularly across psychology and neuroscience, since April 2019 they have worked closely with the Secretary of Educational Evaluation in Argentina on the reform of the National Evaluation Report. They have particularly focused on the topic of School Climate as an entry point for the inclusion of wellbeing and human dignity in education initiatives throughout the country.

The link aspect of their work focuses on community building to network with other new paradigm learning communities. The goal is to create synergy among them which they do through mapping initiatives, modeling synergy and using connecting technology such as Kumu and Facebook. They have developed connective intelligence by presenting the entire ecosystemic project on their website, collecting and sharing information and characteristics of projects, as well as setting up technological platforms for interaction, all at the local, regional and global levels. This enables connection first at the face to face level, among culturally similar initiatives, and then among and between culturally different ones. Then at the third level, they are focusing on developing wellbeing projects that awaken interest in and provide support for education initiatives that incorporate

practices of wellbeing. They do this across the three levels to allow for interdependence and co-arising opportunities across the ecosystem at the grass-root, top down and accompanying processes. This ensures awakening in each community the interest and capacity to construct their own educational plan to reach their highest human potential, helping current top down organizations to support initiatives from the ecosystems that empower communities to accomplish their new educational goals. In addition they ensure there are external resources, such as professional/counseling, to support the community in accomplishing their new education objectives.

At the time of the writing of this report, the project successfully consolidated a community of 13 pioneer Evolutionary Learning Communities (ELCs: five private schools, one public school, three education service providers, three education non-profit foundations, and one governmental education innovation network).<sup>267</sup> Together, these comprise the pilot Evolutionary Learning Ecosystem (ELE) as a prototype and initial impulse to seed the emergence of an autopoietic ELE that grows organically. These ELCs have begun to explore common potentials by sharing resources, values, educational objectives, and an emergent holistic worldview that interweaves their shared understanding of what it means to be human in today's fast-changing world. By using the two main technological platforms for mapping their relationships and fostering synergies among them, respectively, the ELCs have begun to take agency in the co-creation of actionable ideas that will benefit the entire ELE while simultaneously benefiting the various ELCs, themselves. The result of this process is an emergent interbeing: the collective "edunaut" of thrivable education.

<sup>266</sup> <https://ecosistema.metta-aprendizaje.com/>

<sup>267</sup> <https://youtu.be/JhamwroldAE>

# 3.2

## Hindrances

If ecosystem organisation is emerging as our potential new future then we must ask ourselves why isn't everyone doing it already? What hinders the positive intent of these and many other leaders in developing and becoming part of thriving learning ecosystems? As shared in the latest IU and GELP reports some key issues they found faced by pioneers of the learning ecosystem have previously been identified as struggling to know 'how to' organize the following:

- How to evidence learning so that multiple stakeholders can interpret the results
- How to design, develop and quality assure professional and other roles
- How to balance consistency and scale with diversity and localism
- How to ensure sustainable funding while diversifying governance
- How to augment the role of jurisdiction in creating the space, incentivising, enabling and creating appropriate regulatory<sup>268</sup>

In our research we found that there are two major areas of hindrance: relational and structural with further sub-categories identified within these two groups.

Relational relates particularly to the personal skills, abilities and mindsets required to do this work at the level of self, but of course deeply connects to local and global communities. Structural relates to the organisational norms and practices which hold progress back at the local and global levels:

Hinderance type	Subcategory	Elements
Relational	Inability to establish collaborative relations	Lack of ability to reach consensus Poor connections Mistrust Lack of collaboration Authoritarianism
	Current circumstance/personal capacity	Lack of openness Narrow mindedness Lack of imagination/reimagination Lack of courage Lack of consciousness Lack of awareness Clashing personalities Egos Authoritarianism Lack of resilience Low wellbeing No joy

Structural	Strategic/decision making deficiencies	<ul style="list-style-type: none"> <li>Not enough explicit vision building</li> <li>Lack of spokesperson for vulnerable</li> <li>Lack of neutral parties</li> <li>Lack of diversity</li> <li>Poor processes for agency &amp; decision making</li> <li>Lack of informed &amp; available evidence</li> </ul>
	Organizational management deficiencies	<ul style="list-style-type: none"> <li>Poor management &amp; governance structures</li> <li>Poor role clarifications</li> <li>Slow pace of change</li> <li>Misaligned assessment</li> <li>Unknown how to provide consistency at scale</li> <li>Outdated prizes/challenges</li> <li>Low/ misaligned incentives and motivations</li> </ul>
	Resource deficiencies	<ul style="list-style-type: none"> <li>Lack of time, space &amp; energy</li> <li>Inflexible and lack of funding</li> <li>Lack of sustainability and regeneration</li> <li>Necessity of 'high profile' stakeholders</li> </ul>
	Structural support for collaboration deficiencies	<ul style="list-style-type: none"> <li>Poor collaboration processes &amp; connection of services/stakeholders</li> <li>Too much competition/punishment</li> <li>Poor trust building exercises &amp; activities</li> </ul>

**Table 6.** Key hindrances of learning ecosystems as identified by ecosystem leaders

“We need to understand how to move towards having really vibrant and well expressed synergy, alignment, how are we using this sense and how it lives in your body and being able to know when we are tuned. We can think of it like a bicycle with spokes where you have to turn the spokes to get rid of wobble, the idea of spinning together. Asking the question of are we well aligned with ourselves and are we together on that.

Where is the synergy to connect? How do we create synergy so what I do augments what I'm doing and others without a whole lot of energy it requires to work the way we are at the moment so we are not drained?”



**Alexander Laszlo**,  
Director of Development at the  
Laszlo Institute of New Paradigm  
Research

<sup>268</sup> March 2019 GELP Israel Convening Report: [Anticipating the Future — Leading Education Transformation and](https://www.wise-qatar.org/app/uploads/2019/05/wise_report-rr.1.2019-web.pdf) [https://www.wise-qatar.org/app/uploads/2019/05/wise\\_report-rr.1.2019-web.pdf](https://www.wise-qatar.org/app/uploads/2019/05/wise_report-rr.1.2019-web.pdf)

Contributors to this research noted that at the relational level there is a lack of time, space and learning that allows for necessary skills, values, and mindsets to develop. A lack of trust was the most commonly identified hindrance to creating ecosystems. At the organisational level it was noted that current societal norms do not support sustainable or regenerative development at the ecosystem level. The difficulties in relational elements imply that ecosystem leaders and collaborators (being the highly diverse set of stakeholders required) need greater support in developing their personal skills and abilities. Vishal Talreja, highlights, for example that “There is a lack of recognition that we don’t know how to collaborate. We are sitting on an assumption that we know how to do it, we do not invest enough time into the process of trust building”. Further backed up by Stephen Harris who believes the two main hindrances lie very much within this relational element that “One, teachers have never been taught emotional intelligence. Universities teach people to become control agents within a group of people, to be supervised and checked which is antithetical to a positive relationship. They need to learn how to have positive functional relationships and these need to be in place before you move forward. Secondly, teachers have never been taught to collaborate. They think they can but in fact they cannot, which is not their fault but they have not been trained. Those who teach MBAs do so in collaborative teams but we do the opposite in teaching. How can they become agents of change and collaborate when they can’t do it themselves?” It seems that we need to reimagine and recreate personal development opportunities for educators and educational stakeholders alike so we can support those leading education systems or initiatives to foster change for the benefit of others and the planet. Another key

difficulty ecosystem leaders who contributed to this research highlighted was the perceived need to have ‘high’ profile stakeholders as partners or promoters of their work, and that needing to gain this mostly performative recognition “distracts from the work on the ground”. Furthermore, another major area of hinderance noted by contributors is a systemic level of burnout for educators and change agents, which is particularly common in the fields of social justice<sup>269</sup> and education work<sup>270</sup>.

Creating new spaces of neutrality for stakeholders to come together for shared learning may provide opportunities for stakeholders to develop the needed capacities to address the hindrances to ecosystemic learning. Cities of Learning at the RSA, and [Educatió 360 at Fundació Jaume Bofill](#)<sup>273</sup> and Boiling Points network, for example have noted that when neutral spaces are created, this allows for people from all perspectives and areas across learning and education to release any previous power structures or hierarchy that may inhibit them from collaborating as effectively as possible. Educatió 360 do this by scaffolding

“There is a lot of stress on the financial pressure to achieve outcomes we know less about and are just starting to delve into. We expect outcomes for young people to improve quite quickly but financial resources help make it happen and when we don’t see the changes quickly we give up on things. Not having the type of long-term approach to developing an ecosystem is really challenging, you’re without the capacity to deliver”



**Gina Cicerone,**  
Fair Education Alliance

<sup>269</sup> <http://www.edchange.net/publications/Burnout-education.pdf>

<sup>270</sup> <https://eric.ed.gov/?id=ED194464>



## Citymart

Citymart's platform and business is the distillation of the fifteen-year journey of Citymart Founder and CEO Sascha Haselmayer and his team. Sascha applied design thinking from his architectural training to reach a simple insight: every procurement is an opportunity.

Today, over 130 cities have adopted Citymart's tools and methods, now provided through Citymart's digital platform. Citymart's work has been globally recognized by Ashoka, Bloomberg Philanthropies, the Knight Foundation, the Rockefeller Foundation, the U.N. Global Compact Cities Programme and

many other organizations. So what does this look like in practice? The City of Dallas needed a new way of collaborating. With Citymart's help, the Dallas discovered new methods of engaging employees and stakeholders in addressing the urgent needs of its fragmented social care system. The city started by crowdsourcing ideas from its employees and local service providers to better understand the opportunities and challenges facing its new office of Community Care. Through Citymart's market intelligence, tools, and expertise, Dallas gained a clearer vision of what needed to be done.<sup>271</sup>

## Citymart model <sup>272</sup>

### How Dallas Improved the Coordination and Quality of its Social Care Services

#### The Opportunity

In 2017, the City of Dallas created a new office of Community Care to provide social support services to people in financial need. City Hall wanted input from city employees and care providers to help guide this new office and needed a digital platform that could help them manage this engagement. Dallas chose Citymart to create an ideation challenge that would help them bypass traditional processes and engage community care stakeholders in addressing issues within the community care system.

#### The Ideation challenge

Dallas invited 38 organizations to participate in the challenge and develop strategies for tackling the fragmented community care system. Citymart enabled Dallas to manage participants, share relevant information, and standardize responses.

For participants, Citymart provided speed and better quality through in-platform market intelligence and guidance to craft their submissions. Within a week, Dallas received 63 submissions.

#### Develop Action Areas

Citymart analytics helped facilitators and participants of a workshop decide on six priority areas for action: Neighborhood Communication, Health & Wellness Inclusion, Food & Nutrition, Employment & Education, Literacy & Skills Training, and Better Service Delivery.

Citymart drew on its database of 26,000 solutions for cities to provide market intelligence, best practice and financing models to inform policy, strategy, and budget plans for the new Community Care office.

#### Unifying mission

1. Citymart helped Dallas get clear mandate for its new office and generate ideas for improving service delivery from actual stakeholders
2. Citymart enabled the city to effectively promote the challenge and streamline the data collection and analysis.
3. 60+ submissions and ideas will serve as valuable resources for the Community Care office's planning and budget proposals.
4. Citymart made it easy to use market intelligence throughout the process.

<sup>271</sup> <https://www.citymart.com/our-history>

<sup>272</sup> <https://www.citymart.com/success-stories-1/how-dallas-improved-the-coordination-and-quality-of-its-community-care/2019/10/22>

the coalition, bringing together many different leaders across a city through activities of support such as helping people to understand local policy opportunities to empathising deeply with the language of educators and teachers who work with children and young people. The ultimate focus is on finding the best way to connect learning at the local level, using different tools for different stakeholders in context relevant ways but ultimately inviting all to work collaboratively to advance shared learning.

The enablers and hindrances mentioned above partnered with increasingly complex challenges facing humanity as outlined in this report underscore the embedded patterns facing educational leaders and learners alike and the need for an alternative approach to both learning and leadership in the 21st century. In order to create the conditions for ecosystemic learning we must address both the relational and structural barriers that our current systems promote. This shift will require nothing less than the healing of our broken systems and the rekindling of human aspiration to include and foster a love and care for all life. In the words of Dr. Clarissa Pinkola Estes:

“You are right in your assessments. The lustre and hubris some have aspired to while endorsing acts so heinous against children, elders, everyday people, the poor, the unguarded, the helpless, is breathtaking. Yet, I urge you, ask you, gentle you, to please not spend your spirit dry by bewailing these difficult times. Especially do not lose hope. Most particularly because, the fact is that we were made for these times. Yes. For years, we have been learning, practicing, been in training for and just waiting to meet on this exact plain of engagement... Ours is not the task of fixing the entire world all at once, but of stretching out to mend the part of the world that is within our reach. Any small, calm thing that one soul can do to help another soul, to assist some portion of this poor suffering world, will help immensely. It is not given to us to know which acts or by whom, will cause the critical mass to tip toward an enduring good...”<sup>274</sup> ■

<sup>273</sup> <https://www.fbofill.cat/educacio360>

<sup>274</sup> <https://www.awaken.com/2017/01/dr-clarissa-pinkola-estes-we-were-made-for-these-times/>



“

Even with all other elements present, it is culture that holds the “essence” of ecosystemic projects. The culture of the ecosystem should enable continuous opportunities for improvement and change, in a way that is disruptive and adaptable to support creativity and innovation.

”

# HOW WE LEAD TOGETHER

**GARDENING - WEAVING**  
cultivation of learning ecosystems      relationships between ecosystem actors

**ECOSYSTEM THRIVALISTS**

learning from nature

Experimentation with diverse ways of leadership



**UNLEARN - REIMAGINE - RELEARN**  
ILLUMINATING ALTERNATIVE PATHWAYS

# 4

## Ecosystemic Leadership & Learning

# 4.1

## Ecosystem Thrivalists

This research has been dedicated to exploring the process of co-creating learning ecosystems and understanding the work, inspirations, and competencies required to develop them. Around the world there is a wide spectrum of emerging approaches to leadership that share common ground as it relates to affecting local and global positive change. For example, [Change Elemental](https://changeelemental.org/resources/cultivating-leaderful-ecosystems/)<sup>275</sup> suggests that “cultivating leaderful ecosystems” along with the practices of advancing deep equity, valuing multiple ways of knowing, influencing complex systems

change, and creating the space for inner work are all key elements of creating “deep and wide-scale change”<sup>276</sup>. This is a profound shift from conventional industrial notions and practices of leadership and reflects a growing renaissance and revolution in how we learn from our human legacy and reimagine how we lead going forward. Table 7 below highlights a small cross section of the many contributors (researchers, practitioners, and/or communities) around the world who are bringing forward and evolving approaches to leadership and some of the key aspects of this shift.

While the above table is clearly not an exhaustive of the many kinds of approaches to leadership present around the world or emerging today, it does point to a variety of approaches to how we lead together, the role of leadership, the goal of leadership as a pathway for change, and potential ways of reimagining how we organize for shared leadership.

Leadership Type	What is it?	Principal: Researchers, Practitioners, or Communities
Liminal <sup>277</sup>	Mutually alert care and attention to the wellbeing of all people and ecological systems. Emphasis on relational characteristics, which cannot be bound to an individual, organization, nations, religions, or institutions rather the liminal between actors.	Nora Bateson, Stephen Tierney, Robert Tomes, George Por
Hosting <sup>278</sup>	Hosting is a participatory and process oriented way of engaging in meaningful conversations that lead to impactful work that matters.	Art of Hosting Global Community, Toke Møller, Margaret Wheatly, Mark McKergow
Servant <sup>279</sup>	A servant-leader focuses primarily on the growth and well-being of people and the communities to which they belong, shares power, puts the needs of others first and helps people develop and perform as highly as possible.	Robert K. Greenleaf, Ken Blanchard, Stephen Covey, M. Scott Peck, Ann McGee-Cooper & Duane Trammell, Larry Spears, and Kent Keith. Frederic Laloux, Samantha Slade, Sociocracy 3.0

<sup>275</sup> <https://changeelemental.org/resources/cultivating-leaderful-ecosystems/>

<sup>276</sup> <https://nonprofitquarterly.org/cultivating-leaderful-ecosystems/>

<sup>277</sup> <https://www.kosmosjournal.org/article/liminal-leadership/>

<b>Horizontal, Teal, Agile</b> <sup>280</sup>	Networked, collaborative, and shared leadership approaches to organizing and co-creating projects, organizations, and initiatives that support continuous evolution, learning, and the prototyping of solutions, products, or services	Frederic Laloux, Samantha Slade, Sociocracy 3.0, Global Agile Community, Teal 4 Teal Community, SCRUM community
<b>Systems and Systemic</b> <sup>281</sup>	Understanding and addressing complex adaptive opportunities and challenges within systems, influencing leverage points toward desired outcomes, and working toward the long term evolutionary viability of systems.	Peter Senge, The Academy For Systems Change, Bela Banathy, Alexander Laszlo, School For Systems Change, Emergent Strategy Ideation Institute, Systems Sanctuary
<b>Chaordic</b> <sup>282</sup>	Chaordic Leadership is both a management style, and a system of organization characterized by the harmonious blending of both order and chaos principles where neither is dominant (e.g. competition and cooperation).	Dee Hock, Art of Hosting Community
<b>Transformational</b>	Where a leader works with teams to identify needed change, creating a vision to guide the change through inspiration, and executing the change in tandem with committed members of a group.	James V. Downton James MacGregor Burns
<b>Regenerative</b> <sup>283</sup>	Working together to co-create a world where purpose, people, planet and profit collectively thrive. A world built on regenerative principles, interconnection, and co-design	Giles Hutchins & Laura Storm <sup>284</sup> , John Hardman <sup>285</sup> , Daniel Christian Wahl <sup>286</sup> , Gaia Education, Gaia University, UCI (Costa Rica), Universidad del Medio Ambiente, Global Ecovillage Network, Regenerative Communities Network, Global Permaculture Movement
<b>Integral</b> <sup>287</sup>	Theory and practice that can be employed to unify and evolve worldviews, cultures, organizations, and systems through holistic development.	Ken Wilber, Peter Merry, Ubiquity University, Integral Coaching community, Integral Life, Integral Cities, Integral Without Borders, Meta Integral
<b>Social Justice</b> <sup>288</sup>	Social justice and deep equity (ie: BIPOC, queer, feminist), intersectional, addressing systemic violence, multicultural leadership, transformative justice	Rachel Cargle <sup>289</sup> , Mia Mingus <sup>290</sup> , Naomi Ortiz <sup>291</sup> , Charlene Carruthers <sup>292</sup> , Gloria E. Anzaldúa <sup>293</sup> ; Vandana Shiva <sup>294</sup> , Eli Clare <sup>295</sup> , No White Savors <sup>296</sup> , Generative Somatics <sup>297</sup> , Eve Tuck <sup>298</sup>

**Table 7.** Various paradigms indicating the emerging model of leadership<sup>278</sup> <https://www.margaretwheatley.com/articles/Leadership-in-Age-of-Complexity.pdf><sup>279</sup> <https://www.greenleaf.org/what-is-servant-leadership/><sup>280</sup> <http://www.nwlink.com/~donclark/leadership/horizontal.html><sup>281</sup> [https://www.virtualstaffcollege.co.uk/wp-content/uploads/strategic\\_interviews\\_complete.pdf](https://www.virtualstaffcollege.co.uk/wp-content/uploads/strategic_interviews_complete.pdf)<sup>282</sup> [https://www.meadowlark.co/the\\_art\\_of\\_chaordic\\_leadership\\_hock.pdf](https://www.meadowlark.co/the_art_of_chaordic_leadership_hock.pdf)<sup>283</sup> <https://www.regenerators.co/><sup>284</sup> <https://www.regenerativeleadership.co/><sup>285</sup> <http://integralleadershipreview.com/archive-ilor/archives-2010/2010-10/1010Hardman.pdf>

The above mentioned shift from industrial/assembly-line learning to ecosystemic learning requires a seismic shift in both learning and leadership. In order to transition toward learning that fosters multi-stakeholder and collective mutual benefit we need to evolve the ways in which we learn and lead together. Literature in the business field, for example, explores the need for “ecosystem CEOs” who engage in continuous learning to address multiple, connected and complex dynamics which requires new practices and relationships, through which the focus of leadership moves from the individual and individual success to the collective and collaborative mutual benefit.<sup>299</sup> From this perspective, ecosystem leaders are characterized by “agility, a fail-fast mentality, and unassailable trust. They are created for a number of reasons, such as testing new ideas, innovating around products, delivering across new channels, and finding alternative ways to collaborate — all in order to develop a win-win situation for the partners, one that will allow them to meet — and stay ahead of — the demands of their stakeholders.”<sup>300</sup>

Based upon the evolving nature of leadership as described above, and the dire need for leadership practices to evolve as indicated by global socioeconomic and political dynamics, ecosystem leadership is emerging as a potential pathway to unlearn, reimagine, and relearn how to both learn and lead together as we co-create life affirming futures together that work for all peoples and our biosphere home. The following table exacerbates the contrasts and differences between “industrial leadership” and “ecosystem leadership” in order to highlight

how these differing approaches to leadership might impact how we learn together.

The above contrasts can be helpful beyond the pejorative tone toward industrial leadership when we take into account that in general most leaders, wherever they are placed in our institutions, organizations, or systems are more often than not seeking to make a positive difference in the world for their communities and families. It is our human systems rather, by and large that foster continued de-humanizing, future-limiting, and win/lose dynamics that harm all life and reward the continuation of these dynamics. In the face of these persistent and paradoxical dynamics we need leadership approaches that model the intelligence of nature, that foster cultures of collaborative learning, and are guided by life affirming visions of the future.

Many of the contributors to the research in this report point to the vanguard learning and leadership development approaches of The Presencing Institute as exemplary of the kinds of individual and collective capacity building that is needed to evolve the ways we address the challenges and opportunities we face in the world today. [The Presencing Institute](#)<sup>301</sup> has, for example, developed a

“What I try to do is make the networks work together and to have and propose tools for the shift of consciousness.”



**Noemi Paymal,**  
Pedagoogia 3000

<sup>286</sup> [https://www.amazon.co.uk/dp/B07NDJS87V/ref=dp-kindle-redirect?\\_encoding=UTF8&btkr=1](https://www.amazon.co.uk/dp/B07NDJS87V/ref=dp-kindle-redirect?_encoding=UTF8&btkr=1)

<sup>287</sup> <https://integraleuropeanconference.com/integral-theory/>

<sup>288</sup> <https://www.haymarketbooks.org/books/780-freedom-is-a-constant-struggle>

<sup>289</sup> <https://rachel-cargle.com/the-great-unlearn/>

<sup>290</sup> <https://leavingevidence.wordpress.com/2019/01/09/transformative-justice-a-brief-description/>

<sup>291</sup> [https://rootedinrights.org/why-i-no-longer-provide-free-disability-access-advice/?fbclid=IwAR1zzcaG9WjigcqaFXuZ\\_5cy9wt8C5QGHC9FRpU\\_gUGxs13ek18W-odXM](https://rootedinrights.org/why-i-no-longer-provide-free-disability-access-advice/?fbclid=IwAR1zzcaG9WjigcqaFXuZ_5cy9wt8C5QGHC9FRpU_gUGxs13ek18W-odXM)

<sup>292</sup> <https://www.charlenecarruthers.com/unapologetic>

<sup>293</sup> [https://en.wikipedia.org/wiki/Borderlands/La\\_Frontera:\\_The\\_New\\_Mestiza](https://en.wikipedia.org/wiki/Borderlands/La_Frontera:_The_New_Mestiza)

<sup>294</sup> <https://www.powells.com/book/staying-alive-women-ecology-and-development-9781623170516?partnerid=33733>

<sup>295</sup> <http://eliciare.com/>

“

Ecosystem leadership is emerging as a potential pathway to unlearn, reimagine, and relearn how to both learn and lead together as we co-create life affirming futures together that work for all

”

Industrial Leadership	Ecosystem Leadership
<p>Hierarchical, top down power structure and flow. Focus on people being human resources and people rely on linear structure and analytical logic. Communication is typically focused toward downloading and transmitting data and information.</p>	<p>Networks and communities working and learning together. People are valued at the individual and collective level, as interdependent contributors. Communication is typically active and deep listening, enabling vulnerability with questions and storytelling.</p>
<p>Command and control with an authoritative approach to relationships. Fear, manipulation and demanding compliance. Encourage separation, segregation, &amp; self-centeredness.</p>	<p>In service to life, shared agency and transparent authenticity relationships. Collaborative, co-facilitative, enabling, wisdom and humor. Culture of integration, empathy, &amp; compassion.</p>
<p>Closed and guarded information policy. Fear of failure leading to short sighted and short term planning.</p>	<p>Sharing information and data to improve the quality of creativity and learning. Fostering experimentation with a long-term view prioritised.</p>
<p>Representation of workplace or community is often homogeneous.</p>	<p>Representation of workplace or community is diverse.</p>
<p>Competitive: win — lose</p>	<p>Collaborative: win-win</p>

**Table 8.** Contrasting industrial and ecosystemic leadership models

leadership program which “aims to activate the co-shapers of a new global movement (and action research university) one that integrates science, technology, consciousness, and profound societal change to bridge the major ecological, social, and spiritual divides of our time.”<sup>302</sup> Building upon its core change theory, **Theory U**<sup>303</sup> the Presencing Institute fosters spaces for learners to “lead from the emerging future” and illuminates alternative pathways that we can take along the journey of evolving how we learn together.

Moving toward synthesis, based upon the perspectives and experience of those contributing to this research and our own prototyping in the field we have identified a variety of roles and competencies ecosystem leaders play when cultivating learning ecosystems as well as the roles played by diverse actors within learning ecosystems. Based upon these findings, there are five major categories presented below within a spectrum of what we call gardening and weaving in evolving learning ecosystems.

<sup>296</sup> <https://nowwhitesaviors.org/>

<sup>297</sup> <https://generativesomatics.org/>

<sup>298</sup> [evetuck.com](http://evetuck.com)

<sup>299</sup> [https://www.russellreynolds.com/en/Insights/thought-leadership/Documents/Beyond%20the%20Corner%20Office%20\\_Leadership%20in%20a%20Multi-Company%20Ecosystem.pdf](https://www.russellreynolds.com/en/Insights/thought-leadership/Documents/Beyond%20the%20Corner%20Office%20_Leadership%20in%20a%20Multi-Company%20Ecosystem.pdf)

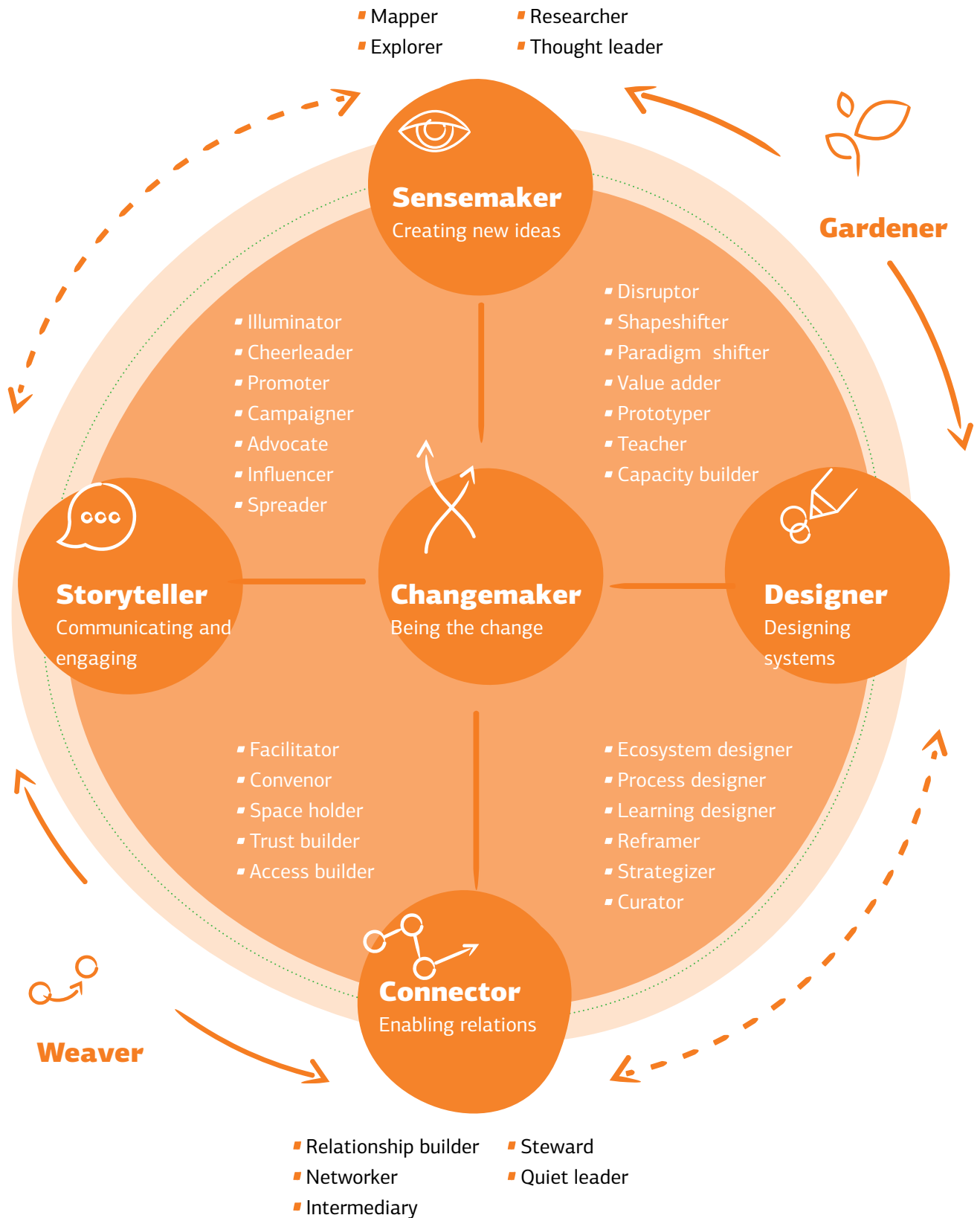
<sup>300</sup> Same

<sup>301</sup> <https://www.presencing.org>

<sup>302</sup> <https://www.presencing.org/programs/marketplace/presencing-advanced-program-ecosystem-leadership>

<sup>303</sup> <https://www.presencing.org/aboutus/theory-u>





**Figure 14.** Learning Ecosystem Roles/Competencies as identified by leaders



## GELP

**GELP** (Global Education Leaders Partnership)<sup>304</sup> is a powerful alliance of global education leaders who are seriously committed to transforming the practice of education and to develop the personal skills they need to lead that transformation. The partnership operates as a “network of networks” for people in the education sphere, as well as those involved in business, politics, the entrepreneurial world, and civil society. More than just a space for discussion, GELP created and utilized numerous useful tools for educa-

tors, including a “Roadmap to Education Transformation,” which guides system leaders in the evolution of their educational transformations to create actionable plans. Other tools include the Elements for System Transformation map, which helps leaders visualize the steps and planning needed to advance towards transformation, and Redesigning Education: Shaping Learning Systems Around the Globe, which highlights GELP’s global members as they journey towards the education systems they need and want.

<sup>304</sup> <https://www.gelponline.org/>

## Emerge

**Emerge**<sup>307</sup> are an independent, non-profit media platform sowing the seeds of a new civilisation, they share a mix of articles, podcasts, videos, as well as showcasing alternative learning spaces and events in an accessible way. Emerge’s principles are:

- We hope to sow the seeds for a new civilisation — we are farmers or gardeners.
- We are observing and helping to give birth to a new civilisation — we are midwives.
- We want a more-conscious society — we are alarm clocks or zen teachers.
- We seek to co-create a more conscious society — we are collaborative innovators.

- We are interested in three kinds of transformation; the self, society and emergent systemic properties of these two together — we are alchemists, or societal chefs.
- We recognise that how we perceive and know and represent the world has revolutionary potential — we are artists.
- We seek complex integration of diverse bodies of theory and practice — we are epistemic freedom fighters.
- We want to support innovative forms of spiritual practice and inquiry that better connect us to the challenges of our time — we are conveners and hosts.
- We love powerful and beautiful communication — we are drum rolls and content curators.”

<sup>307</sup> <http://www.whatisemerging.com/>

From this perspective the changemaker is at the heart of the process of evolving learning ecosystems. Based upon the experience of the ecosystem leaders interviewed for this research the central aspiration of changemakers in this context is purpose-driven, to “be the change they want to see in the world” for their communities and the world. Changemakers in learning ecosystems seem to act as multifaceted instigators of a variety of competencies: sensemaker, connector, storyteller, and designer. Some focus predominantly on the sensemaking aspect as their contribution to the ecosystem, which might be in the form of generating new ideas. This could also look like a social entrepreneur who has a great shapeshifting ability as they are often on the ‘frontline’ developing relationships and figuring out the best way to add value to the entire ecosystem. We can contrast this with the storyteller which may come in the form of activism, research or communication roles, where the emphasis is on connecting and promoting the new paradigm (which of course overlaps, like all, with the sensemaker, changemaker, designer and connector).

It has been noted that ecosystem storytellers have a particularly unique role in the development of learning ecosystems. As mentioned above in section 2.3, the stories and myths we tell ourselves play a huge role in how we perceive and act. Mythologist Joseph Campbell, in *The Power of Myth*, defined the function of mythology as “the provision of a cultural framework for a society or people to educate their young, and to provide them with a means of coping with their passage through the different stages of life from birth to death.”<sup>305</sup> A myth then is woven into the very fabric of a culture, our relationship to our environment, and how we learn. The narratives we perpetuate and create shape the

character of our shared understanding of life and our roles within our communities. Storytellers in learning ecosystems play the role of caring for and shaping the narratives, the stories, the emerging myths of our learning and leadership, illuminating the possible and affirming the desired future potentials. *Activate the Future*<sup>306</sup> by Jen Andersson, is an example of retelling narratives by sharing insights from research and projects that are focused on themes such as systems thinking, creativity and innovation and regenerative leadership.

The above mentioned competency areas are bound by the two overarching elements, “gardening” and “weaving”, which focuses on the cultivation of learning ecosystems and the relationships between ecosystem actors (see further explanation below). As depicted, developing ecosystems requires a multitude of abilities and skill sets and the ability to flexibly support individuals to “wear many hats” and/or foster collaboration between diverse role relationships. Oftentimes ecosystem leaders work concurrently on many different projects across the ecosystem and the roles and competencies they develop evolve with the focus of their work. The role of leadership in learning ecosystems seem to be an evolving process of both responding to needs, shaping a shared future vision, and cultivating the space for the collaborative relationships required for multi-stakeholder learning and mutual benefit.

Throughout this research project it has been noted that actors within the emerging practice of ecosystemic learning have found it challenging to name the role or roles they play. Throughout this report we have referenced research contributors as “ecosystem leaders”, “practitioners”, “contributors”,

<sup>305</sup> <https://www.amazon.co.uk/Power-Myth-Joseph-Campbell/dp/0385247745>

<sup>306</sup> <https://medium.com/activate-the-future>

“innovators”, or simply “leaders”. Other names for this work that were either considered for this report or are seen in the field include such titles as ecosystem animator, ecosystem catalyst, or ecosystem steward. Part of the challenge in naming and narrating this emerging practice is that the complexity of learning ecosystems themselves may require us to go beyond merely reframing or repurposing existing terms, toward articulating new language that allows us to imagine and enact different ways of leading together. For example, as stated previously, ecosystems are not shaped from the outside but rather from within, ecosystems are not “led” by one actor, they are symbiotic and collaborative, and through the practice of co-creating learning ecosystems shared learning and leadership is cultivated. What then do we call practitioners of this work? In synthesis of this research to date, we propose that the shared work of co-creating learning ecosystems is best encompassed by the term Ecosystem Thralist.

In synthesis, Ecosystem Thralists are the life affirming leaders who serve and support the capacity building of learners and leaders within learning ecosystems. The work of ecosystem thralists is to foster learning and impact that goes beyond survival or substance toward thriving for all. Ecosystem Thralists are the “weavers” and “gardeners” of learning ecosystems, working toward fostering the symbiotic relationships and holistic competencies that enable learning ecosystems to thrive. This term goes beyond conventionally hierarchical and patriarchal notions of leadership, and makes room for creative, inclusive, and diverse expressions of what leadership can be. As noted above, this work includes such elements as sensemaking, changemaking, designing, and connecting. It also may encompass disruption, direct action, activism in many forms, or the confrontation and addressing of systemic violence and healing of trauma individually and collectively. It is in the active practice of this work into the future where we will discover what it

# 4.2

## Weaving a Web of Relationships

As stated previously, this research suggests that learning ecosystems offer novel pathways for learning in relationship with multiple actors across societal domains of human endeavor. “Learning in relationship” is one of the fundamental elements that contributors characterize as essential to ecosystemic learning. In the longest longitudinal study on happiness it was found that close relationships, more than money, fame or any other factor, are what keep people happy throughout their lives<sup>308</sup>. Not only are they important for overall well being, but we can learn ‘better’ and ‘more’ when we are happy too<sup>309</sup>. Studies have also shown that at the traditional teacher-student level, for example, the strength of the relationship equates to the positive wellbeing of the child and in success with traditional test scores<sup>310</sup>. Relationships are central to our happiness in life and in learning ecosystem relationships seem to be the generative source that animates and enables learning across perspectives, contexts, and between diverse actors in a system.

Across conversations with learning ecosystem leaders it was found that overwhelmingly the most mentioned element that can foster meaningful relationships or collaborations that can help education ecosystems flourish is trust. The role of trust is a critical aspect when building new relationships. Research shows that when authenticity and empathy are present, trust increases.<sup>311</sup> The qualities

described as key to building trusting relationships are given insight in the table below. Francis Frei, trust expert, shares that the most common difficulty in building trust is that we do not believe we are ‘in it’ with and for the other person, we are missing a deep sense of empathic connection. This should come as no surprise in our VUCA world when carving out time, space, energy and attention is increasingly difficult. Questions surrounding authentic and human partnership and relationship can arise, particularly if we think to the context of leaders within an ecosystem who often have many people vying for their attention where different power dynamics can also be at play.

“Sometimes we put interests/mission together and expect that they will collaborate naturally but you can forget that if you don’t trust you can’t challenge one another. We need to put the human at the centre of the relationships to have deeper conversations”



**Zineb Mouhyi,**  
WISE

<sup>308</sup> <https://www.adultdevelopmentstudy.org/>

<sup>309</sup> <https://natberryblog.wordpress.com/2013/02/17/are-happy-students-successful-students/>

<sup>310</sup> <https://link.springer.com/article/10.1007/s10648-011-9170-y>

<sup>311</sup> [https://www.ted.com/talks/frances\\_frei\\_how\\_to\\_build\\_and\\_rebuild\\_trust/discussion#t-214088](https://www.ted.com/talks/frances_frei_how_to_build_and_rebuild_trust/discussion#t-214088)

Qualities	Elements		
Connection	Deep	Authentic	Adaptable
	Trustworthy	Transparent	Fun/Joyful
	Collaborative	Synthermy	Open
	Meaningful	Empathic/Compassionate	
	Emotional		
	Respectful	Playful	
Personality	Reliable	Playful	Committed
	Friend	Stillness	Communicative
	Confident	Soft Ego	Generous
	Passionate	Growth Mindset	Positive
	Empathic/Compassionate	Adaptable	Supportive
	Empowered	Fun/Joyful	Humble
		Learner	
Communication	Rich dialogue	Reflective	
	Deep listening	Non-violent	
	Constructive	Open	

**Table 9.** Aspects of relationship-building within ecosystemic projects as shared by leaders

There are many recommended ways of overcoming these difficulties of building trusting relationships within ecosystemic projects. For example, Brene Brown highlights the critical component of vulnerability and how this is a key to building trust with others<sup>312</sup>. Her research and now widely streamed talk on Netflix ‘Call to Courage’ shares with us simple tools and techniques we can use to be vulnerable in effective ways, especially in times of misunderstanding or conflict. For example, the compelling verbal technique of ‘the story I’m telling myself is’ allows us to see that all situations are ultimately just a narrative and a projection of what we ourselves perceive. It is in building this understanding of ourselves, and then others, that we can begin and continue to connect.

Ecosystem leaders need to build rich, diverse relationships to support their development. This is an emerging field of work and insights are growing on how to best learn how to both transform ourselves for personal development, as well as transform the connection with others and the group for collaboration. Though it is yet to be commonly understood or mastered, at this point in history we have a unique opportunity to experiment on a global scale with what works well and in what situations, finding a way to put into practice theory on a wider scale to share insights as part of the ecosystem development reflection and journey. In the future, through continued experimentation and prototyping we will explore further language and frameworks to explain if and when we feel trust and

<sup>312</sup> <https://brenebrown.com/>



## Change the Script, Autens

At the macro level Vishal Talreja organizes an event called **Change the Script** which is designed around the core principles of creating safe spaces for engagement, deep listening and validation. It also intentionally incorporates use of play and art to engage and facilitate the group journey. One of the workshops ran for all participants at the conference is called 'River of Life'. The idea is that you use the river as a metaphor for life, beginning with creative visualization of your life and the key moments that shaped it through stories, conversations, narratives etc. Following this visualization you can draw the key moments in your life (at least 5) based on the river metaphor, for instance, you can draw a waterfall to represent a failure or a bridge to represent support systems, whatever feels right to you. Following this creation, you find a partner to share and listen to each other's stories. In using this process of creative visualization 1) the river as a metaphor 2) artist visualization 3) sharing and listening a space of safety, empathy and care is created. Participants are now in a deeply reflective place which also helps them build empathy for themselves and their journeys, alongside

listening to others to build empathy in moments of strength and vulnerability in understanding their life journey. It is in this that we begin to trust. Whereas in comparison at the micro level with teachers in the school Lene Jensby has created a powerful workshop tool through **Autens** for collaboratively designing and redesigning learning environments based on how children learn, while transforming the shared pedagogical practice through a playful, creative method that mimics great project-based learning. One innovative teacher might improve their classroom layout and culture, but this is unlikely to have a long term impact on the learning culture of the school, for lasting impact and meaningful change, the whole school community needs to play an active role in changing the culture and design of learning spaces. The workshops have a dual, inter-related purpose: to create design solutions for specific learning spaces and to strengthen a shared learning culture with a very high sense of ownership and empowerment among teachers. They have successfully facilitated this workshop both in Denmark and across the world with over 2,500 educators and these workshops have influenced the daily school life of at least 19,000 students.

why. An increased intentionality around this could potentially lead to deeper and greater relationship building processes that facilitate trust as a precursor to change work.

We can look to the kinds of experiences and environments that do currently exist in the ecosystem to enable this to happen that we can learn from. Ecosystem leader Vishal Talreja reminds us that “I think at the first level, it’s a marathon, not a 100 meter race. When you look at traditional gatherings, you come in and after 2 days you want more interaction. We’re not giving enough time and space for trust building, for collaboration, to create an experience of what trust looks and feels like with people who are not known to each other.” In this work, time and space may sound like a luxury, but the reality is that we cannot afford to not create space and time within our learning journeys for trust building when we understand how important trust building is to the relationships and connections which are the life energy of learning ecosystems.

An organisation working at various levels both building, and then nurturing webs of deep and purposeful relationships, is [The Weaving Lab](#)<sup>313</sup>. Their work focuses on advancing the practice and profession of weaving learning ecosystems for universal wellbeing. This leadership practice requires a different set of skills and ways of being than many classical leadership styles, and builds upon the idea and importance of liminal leaders in today’s world. Weaving is an approach to leadership that relies less on hierarchical authority and centralised control, and more on curating circles, hosting conversations, and building trusted relationships. It involves taking the lead but, equally, empowering others to step forward and take the lead. Weavers talk about moving from ego to eco. Weaving is a complex and nuanced discipline that involves shepherding people from highly diverse institutions, roles, backgrounds and perspectives

“When I started my social enterprise I concentrated on direct service interventions. Once I discovered the concept of collective impact, through ecosystemic engagements I shifted strategy and enjoyed the challenge of weaving alongside others who shared similar impact goals. Essentially, I am now able to play a role in a wider pool of impact leaders dedicated to tackling the root causes of the issues we used to design programs for. It’s through the understanding and engagement of every actor within a ‘system’ we have been able to change that system. The journey continues...”



**Michael Sani,**

Founder of Play Verto and Bite the Ballot, Collaborator of The Weaving Lab

“Everyone shapes the world. Everything we do has consequences, and every consequence causes a response. Our wellbeing is permanently in flux, unfolding from moment to moment through every single human action and reaction. Thus, we need to help everyone understand their influence on the world — to discover and use their agency for making a better world. We need to empower everyone — from the most marginalized to the most privileged — to make a positive contribution throughout their lives and leave the world in a better state than when they entered it. We need to empower everyone as a changemaker”

The Weaving Lab’s Framework for Change



into meaningful collaborations that have systemic impact. The Weaving Lab is made up of ecosystem leaders from around the world.

A major aspect of weaving for The Weaving Lab involves both developing communities and teams of teams whilst, at the same time, also centering self-development. Weavers know they are part of the system, not outside of it, and know that to transform the system, they must also transform themselves. They outline the process of growing yourself, and your teams, and your wider ecosystem, as a continuous process of:



**Aligning:** Aligning a community to a shared purpose, values and incentives; Growing a diverse community; Nurturing dynamic, trusted relationships.



**Collaborating:** Creating the conditions for collective action; Co-creating teams of teams; Maintaining direction & momentum of teams & projects; Fostering innovation and communication across teams.



**Acting systemically:** Understanding systems and systems change; Reading and sensing your ecosystem; Creating impact in your ecosystem; Measuring progress & financing your ecosystem.



**Being the new system:** Being self-aware, empathic, present & open; Being purposeful & proactive; Being reflective, possibility-minded, thoughtful & wise; Being resourceful, creative & playful; Being authentic, vulnerable, courageous & resilient



**Learning:** Being adaptable, growth-minded & curious; Identify community learning objectives & methods; Facilitating flows of learning throughout your community; Monitor, evaluate & apply learnings to evolve community purpose & practice.<sup>314</sup>

This approach also outlines a shift towards the network-based education we referenced earlier on in the report (Section 1.2). The goal of networks is to break out of silos and expand collaboration, build connections for systems change, connect to new people and resources, produce and spread innovation, as well as increase reach and influence. These kind of approaches can work best for complex/wicked problems, including issues that influence the current education system, such as structural racism and income disparity. Organizations like The Weaving Lab are modelling this by trying to develop learning ecosystems for universal wellbeing, currently collaborating with Ashoka, Roundglass, Network Weaver, GEF, Learning Planet, Katapult, WISE, Learnlife and many others to mesh, meld and develop ecosystemically. Much of their work focuses on field building, as well as facilitating experiences and workshops with a variety of organizations in and outside the traditional field of

<sup>313</sup> <https://weavinglab.org/>

<sup>314</sup> <https://www.thegcl.org/weaving-academy/>

education to further weaving as a concept and practice. Furthermore, luminaries like June Holley are instrumental in this field; she has been developing weaving as a network across all domains through the [Network Weavers](https://networkweaver.com/)<sup>315</sup> since 2013. Their work draws upon a network of consultants who develop resources such as research projects, workshops, tools, communication, mapping, coaching and more helping practitioners weave networks<sup>316</sup>.

“One of the most important tools for ecosystem development in education is twitter. It really allows people to come together organically based on what those interests are, allows for everyone to participate, it’s open and you can share and participate and interact so things really grow. For me it’s a very useful, trusted network of friends globally, it’s one of the most powerful tools I’ve come across.”



**Lene Jensby,**  
Director of Autens and Global  
Schools Alliance

<sup>315</sup> <https://networkweaver.com/>

<sup>316</sup> <https://blog.kumu.io/building-intentional-networks-that-drive-impact-part-1-90a7271c7a2a>

# 4.3

## Gardening Ecosystems

Another way to understand the work required to cultivate thriving learning ecosystems is that of ecosystem gardening. Gardening, beyond the metaphor, is a practice of cultivating symbiotic complex living systems, and the work of cultivating learning ecosystems requires working with and learning from nature and its wisdom, evolving our systems and evolving ourselves. In the words of Masanobu Fukuoka “The ultimate goal of farming is not the growing of crops, but the cultivation and perfection of human beings.”<sup>317</sup> In this context, learning ecosystems are the “garden or farm” in which we cultivate healthy conditions for learning to flourish, both for individuals and in communities. This includes seeding opportunities, propagating projects, cultivating thriving ecosystems, and cultivating our capacities as learners and leaders.

Ecosystem Gardeners create new ways of learning and being in the world, both for themselves and their local and/or global community. This can take many forms such as tools, processes, events, accelerators or art. They often create technological platforms to connect this work bringing visibility to change in the digital sphere so they can connect with more people, and evidence their impact to the community and funders. We see leaders using this language and talking about their work through the gardening metaphor. Ismael Palacín shared for example that “if we create new rules people can garden their ecosystems, for example in my garden I will create a

different climate so I can grow different plants.” The role of ecosystem gardeners is particularly noticeable outside the Euro-Atlantic world. In places such as Western Europe or the United States for example, there is a saturation of siloed and disconnected institutions and in this context the main role of an ecosystemic leader is to connect and align, or to weave together, various players. However, in many regions of the world, such as Latin America, Africa, Russia, or the Middle East, there is more impoverished institutional landscape, what some call “institutional voids”<sup>264</sup> and ecosystem leaders have to take a more proactive role in cultivating the landscape before activities such as weaving are a priority. One can think of an analogy with the “rhythms of life”, the cycles of change in day and night and the change of our seasons. Evolving projects and initiatives within an ecosystem, e.g. platforms, competitions, rankings, and accelerators, when introduced into a system, start to influence the whole system. Here, an ecosystem gardener works with what is possible, guiding the evolution of an ecosystem towards more desirable outcomes.

Around the world there are many traditions and movement’s, including Indigenous wisdom traditions, and Traditional Ecological Knowledge mentioned previously, that are dedicated to uniting gardening and farming via the modeling of the wisdom of nature with the development and evolution of the self, our collective intelligence, and our relationship to the ecosystems that are our homes. To highlight a few of many examples from around the world:

- **Permaculture:** a global design movement (created by Bill Mollison and David Holmgren, among others), provides shared ethics of Care for People, Care for the Earth, and Care for our Future as design parameters within which practitioners can design and create mutually beneficial garden, farm, or social systems.

<sup>317</sup> <https://onestrawrevolution.net/>

“

Gardening, beyond the metaphor, is a practice of cultivating symbiotic complex living systems, and the work of cultivating learning ecosystems requires working with and learning from nature and its wisdom, evolving our systems and evolving ourselves. In the words of Masanobu Fukuoka “The ultimate goal of farming is not the growing of crops, but the cultivation and perfection of human beings.

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- **Nature Farming:** a farming movement (created in Japan by practitioners and researchers such as Masanobu Fukuoka, Mokichi Okada and Teruo Higa, and brought into the West by people such as John Phillips, the founder of Gardening for Peace) which seeks to create agricultural ecosystems that are in harmony and balance with nature and that makes gardening into an opportunity for spiritual awakening.
- **Biodynamic Farming:** ecological approaches applied to developing farm systems with communities (integrated with education, cultural practices, mysticism, and astrology), based on Rudolf Steiner’s Anthroposophy teaching.
- **Biomimicry:** a design approach that models and harnesses the intelligence of nature as a way of addressing the the grand challenges within human society

Each of the above approaches highlight that humanity has creative agency in how we relate to each other, Earth, and the ecosystems within which we live. Gardening then becomes a practice of learning with and from nature, natural cycles, the inherent intelligence of our Biosphere and co-creating and participating in the unfoldment of living systems. Gardening learning ecosystems in part then is a practice of remembering that we come from Earth and are a part of the living, evolving processes of life, that we can intentionally cultivate learning processes enlivened and modeled after the intelligence of Life. In the words of Buddhist monk Thich Nhat Hanh:

“We need to change our way of thinking and seeing things. We need to realise that the Earth is not just our environment. The Earth is not something outside of us. Breathing with mindfulness and contemplating your body, you realise that you are the Earth. You realise that your consciousness is also the consciousness of the Earth.”<sup>318</sup>

Ecosystem Gardeners cultivate ways of learning and being in the world, both for themselves and their local communities and our global community that are inspired by living systems. This can take many forms such as tools, processes, events, accelerators or art. They often create social and technological infrastructure and platforms to connect this work bringing visibility to change in the digital sphere so they can connect with more people, and evidence and share their impact, successes and learning’s. We see leaders using this language and talking about their work through the gardening metaphor. Ismael Palacín shared for example that “if we create new rules people can garden their ecosystems, for example in my garden I will create a different climate so I can grow different plants.” The role of ecosystem gardeners is particularly noticeable outside the Euro-Atlantic world. In places such as Western Europe or the United States for example, there is a saturation of siloed and disconnected institutions and in this context the main role of an ecosystemic leader is to connect and align, or to weave together, various players. However, in many regions of

“Many of the tools we have developed and adopted are strongly inspired by the maker culture and the coding culture, inspired by the common languages coders make and share. They have their project but they collaborate and in which they have low cost transactions to collaborate — the recognition is better, it’s not money or power, it’s the recognition of you peers and your prestige in that ecosystem — this really reflects on the future of culture of systems.”



**Ismael Palacín,**  
Director of Fundacio Jaume Bofill

“My opinion is that the main purpose is to be a kind of organic, leverage of changemaking in the world. If we’re speaking about tomorrow and a future world and our kids and their kids and we want to change it we should change it through education. If we want to make this shift and change sustainable, we should make it in ecosystem mode, we might be gone but it’s alive and developing e.g. gardening and tree planting which will grow for a long time. If I plant it now it’s not even for me or my children, the level of complexity of ecosystems is similar to the level of complexity of challenges we have as human beings and we have complicated and complex challenges we face and our solutions and answers to these issues should be comparable with complexity so we don’t just find a simple solution that doesn’t work anymore. It’s a paradoxical challenge, on the one hand we have to create this complicated, complex ecosystem with this kind of collective mind and thinking inside it, yet on the other hand we have to be aware of this thinking system whilst being part of the system. It’s really a paradoxical challenge of how to be aware, to understand our mind/body complexity and being part of it. Not just about thinking it’s about perception and feeling, hard to feel something if you’re part of thinking.”



**Alena Surikova,**  
co-founder of the Metaversity in  
Russia

the world, such as Latin America, Africa, Russia, or the Middle East, there is more impoverished institutional landscape, what some call “institutional voids”<sup>319</sup> and ecosystem leaders have to take a more proactive role in cultivating the landscape before activities such as weaving are a priority. One can think of an analogy with the “rhythms of life”, the cycles of change in day and night and the change of our seasons. Evolving projects and initiatives within an ecosystem, e.g. platforms, competitions, rankings, and accelerators, when introduced into a system, start to influence the whole system. Here, an ecosystem gardener works with what is possible, guiding the evolution of an ecosystem towards more desirable outcomes.

Gaby Arenas finds ways to blend the old with the new in her ecosystem gardening approaches, sharing “the purpose of an ecosystem is to create a safe space to foster the skills and opportunities. If you are having a learning process only in the school, you are missing a lot of the learning process which happens outside, for example in the museum, playing in the park or supermarket. Yet, when everyone is aware of this you can create opportunities to enable this which works for young people and adults to foster opportunities and develop skills in a better and more holistic way.” It is the connection of these elements, with different purposes that “help people to have local action concretely to want to do something where you are but know you’re all connected across the globe” as Noemi Paymal explains. Very much in tandem with Gaby’s point, she reminds us that “if it’s local you forget the rest but if you only do the global or network level you’ve forgotten the base and grassroot but we need both. It’s a formula to have both, to learn and have ideas and creativity, this is why I love it!” Compared to weaving or relationship building work, the process of “gardening” can be much more intentional and deliberate about the design of a given learning ecosystem. Gardening within learning ecosystems, similarly to organic

gardens requires “pruning” or “weed out” of life-limiting, or in this case learning-limiting dynamics. In the context of learning ecosystems this might mean addressing limiting beliefs that foster unhealthy forms of competition or changing resources flows within learning ecosystem to foster shared benefit rather than prioritizing “winner takes all” mentalities.

As described above, ecosystem gardening is multifaceted and ecosystem actors do not work in isolation, they must mobilize, connect, and cultivate the many elements and relationships within the ecosystems they work. As described in the 2018 Global Education Futures report Educational Ecosystems For Societal Transformation, this is the work of ecosystem gardening:

“This approach to learning and leadership is a prototype of living practices of the emerging future through creating learning opportunities that cultivate the “seeds of tomorrow”...“Ecosystem gardeners” plant, cultivate, shape, harvest and regenerate educational projects, learning communities, experiences and trajectories within complex living educational ecosystems.”

<sup>318</sup> <https://plumvillage.org/about/thich-nhat-hanh/letters/thich-nhat-hanhs-statement-on-climate-change-for-unfccc/>

<sup>319</sup> <https://www.smu.edu.sg/perspectives/2013/02/27/institutional-voids-black-hole-or-opportunities>

# 4.4

## Ecosystem Acceleration

An important question that some ecosystem leaders are exploring is whether ecosystem development can be accelerated, much in the same fashion as technological startups or cultural innovations who benefit from acceleration programs. Given the scope and the scale of the necessary changes in education systems around the world, and the urgency of global challenges, there may be great value in further exploring how to accelerate the development of learning ecosystems. However, we should also be mindful that ecosystemic initiatives are very different from a typical startup, due to being a multifaceted, co-created, and organically emerging endeavour. “Normal” acceleration methodologies that focus on improving the product, streamlining processes, and attracting investments, are falling short of adequate tools that support complex and multi-directional dynamics of ecosystems.

However, in the field beyond education, a number of successful educational programs already exist that support acceleration of innovation and entrepreneurial ecosystems. The Founders Institute, one of the most successful acceleration programs in Silicon Valley, has created a worldwide community-based process for acceleration of entrepreneurial ecosystems<sup>320</sup>. By focusing on a range of institutions required to support ideation, development, and growth of successful technological startups, they encourage local

ecosystem leaders to catalyze or build up necessary institutional infrastructure to close the gaps in the institutional landscape. This is done by providing seed funding and free office space to early stage projects, or creating training programs on coding that help local populations engage in the IT sector. Similarly, MIT runs a program called the Regional Entrepreneurship Acceleration Program (REAP) that supports teams of entrepreneurial ecosystem leaders, usually a mixed group of government, business and social leaders, in developing ecosystems of their own. These high-profile groups come from all over the world, ranging from Iceland and Singapore to Lagos and Lima, for a two-year process that allows them to build up a sustainable model of supporting technological innovation at the local scale through policies and strategic interventions<sup>321</sup>.

In education, similar programs have been accomplished in recent years. The Weaving Lab jointly with GEF, SKOLKOVO School of Management and Kaos Pilots has conducted a program in 2018 to support 25+ ecosystem leaders in developing their professional and leadership capacities, as well as providing support and peer guidance to projects run by these leaders<sup>322</sup> as mentioned previously has been conducted in 2018 to support 25+ ecosystem leaders in developing their professional and leadership capacities, as well as providing support and peer guidance to projects run by these leaders. Earlier, in 2010-15, Global Education Leaders Partnership<sup>323</sup> conducted a program that helped develop regional teams of policymakers and educators who developed regional or local learning ecosystems. In 2019,

“The ecosystem on a very practical level should be able to sustain its processes, so we need a system that is first and foremost a playground”



**Mila Popovich,**  
Founder, EVOLving Leadership

<sup>320</sup> [https://fi.co/canvas\\_template](https://fi.co/canvas_template)

<sup>321</sup> <https://reap.mit.edu/about/>

<sup>322</sup> <https://weaving.changemakers.com/>

<sup>323</sup> <https://www.gelponline.org/>





## Yakutia regional learning ecosystem

The team of leaders from Yakutia, led by Vladimir Solodov and Anatoly Semenov, can be seen as an example of a regional ecosystem that has notably benefited from the acceleration. Yakutia is the largest single jurisdiction in the world (larger than Argentina), and it is the region with the coldest temperatures on all inhabitable Earth, with almost all of its territory covered with permafrost. Population is scarce, and people usually live in small villages near rivers, separated by hundreds of kilometers. It is the home to the indigenous population of yakuts that comprise half of the population, and a number of other indigenous groups, and still keep shamanic rituals as a part of local government procedures. However, since early 2010s a vibrant ICT sector started to develop in the area, already creating a number of globally recognized startups in transportation, mobile gaming, and more. Yakutia team has joined MIT REAP cohort in 2018, and later joined GEF Accelerator in early 2019. The focus of the MIT

program was very pragmatic: it helped the team build up a system of metrics that allowed it to see the dynamics of the entrepreneurial ecosystem, and to create some strategic interventions such as increased provision of capital to early stage startups. The focus of the GEF program was on introducing the “human element” and working with the talent and the culture of the region. The team started to create its “unifying story” of the ecosystem building upon traditional yakut mythology. It connected the needs of the emerging IT sector with institutions that work with talented youth, and started to create a “polygon of the future”, an experimental space near the capital of Yakutia where young people can design and prototype a future “way of being” in this unique area, technology-enriched (e.g. intense use of solar energy and hydroponic agriculture) yet also derived from traditional ways of living. Finally, the team has self-identified themselves as “ecosystem leaders” and committed to help launch a new learning & innovation ecosystem in one of the cities in Yakutia, the coal mining city of Neryungri.



## Teaching ecosystemic leaders with an ecosystem simulator\*

A simulator has shown to be a successful way of training leadership teams in complex simulation of the real world, by simulating them in virtual environments. The Simulizator / SKOLKOVO team has created multiple simulators to train corporate leaders and education system administrators, including University Simulator, College Simulator (jointly with ILO) and Regional Educational System Simulator. Simulators are turn-based strategies played by teams of leaders during 4-8 hours of simulation, taking into account 1000-1500 parameters

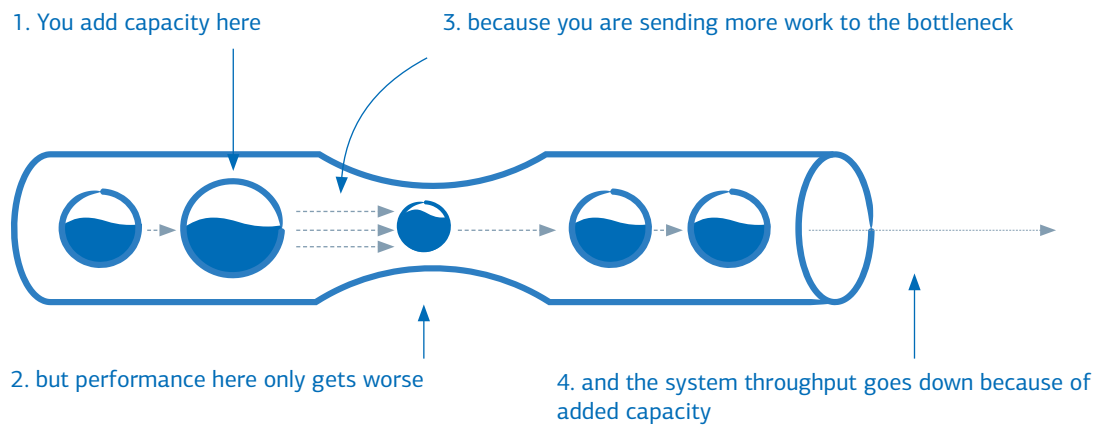
The Ecosystem Simulator, as created by Pavel Luksha and Simulizator team in 2018, models a process of creation of a learning ecosystem on the regional scale. The model integrates the knowledge of over 20 ecosystemic projects around the globe (also represented in this study) — and constantly updates based on feedback from simulator “runs” with teams of leaders. It is the first simulator that captures the ontology of the emergent and evolving field of practice in a digital model. .

Players take the roles of different ecosystem leaders, playing as local government, schools, universities,

employers, parents, or NGOs. The main challenge of players is to “raise” learning ecosystem by initiating new educational programs, projects, and policies (“gardening” the system) as well as building connections between providers and creating communities of innovators (“weaving” the system). Players have to address the variety of glocal challenges such as improving local economy, adapting to new technological innovations, reducing inequality, or overcoming regional environmental crisis. They also have to take care of their own personal thriving as without their own wellbeing, they cannot contribute sustainably to that of the place nor planet.

To support the work of this simulator, as well as a standalone introduction, we create an experience to introduce the concept of a learning ecosystem in groups or events through an Ecosystem Board Game, a simplified simulation that models how leaders collaborate to create learning ecosystems for the region to address challenges and to tap into its possible success factors. In both the simulator and the board game, strategic coordination is required to succeed. The board game is free to use and can be downloaded from the GEF website.

\* <http://ecosystem.simulizator.com/>



**Figure 15:** Understanding the bottleneck in the process (by Tiago Forte<sup>325</sup>)

a national scale Ecosystem Accelerator has been conducted in Russia by Global Education Futures for 70+ members of 11 regional leadership teams across the country. Each team has designed a 3-year multistakeholder roadmap that develops and weaves together regional learning, innovative and entrepreneurial ecosystems. Among other initiatives, participants have commenced new forums, educational innovation competitions and cross-regional STEM education associations, all of which serve to develop learning ecosystems at the regional and cross-regional scale.

A useful approach to gardening has emerged in the GEF Ecosystem Accelerator. The accelerator team and participants used the idea of “acupuncture projects” that have maximal systemic impact with minimal effort or cost. Originally, this approach was coined by Jaime Lerner, a great Brazilian urbanist, with the concept of “urban acupuncture”<sup>324</sup>. To find the areas for acupuncture projects, participants applied the ideas from Goldratt’s Theory of Constraints: that it necessary to identify and work on components of the process that limit the capacity of the whole system (see Figure

15). In the case of learning & innovation ecosystems, they are multi-stakeholder, multilayered systems organized around the processes of developing innovations, entrepreneurial startups, and technological talent (as discussed in Section 1.3). For instance, one of the teams has identified as the limiting factor the lack of meeting spaces that would allow the hosting of large industrial gatherings. Accordingly, even though the area is rich with talent, startups, and technological companies, when companies grow big enough they have to move away because the area does not attract a sufficient number of corporate clients and partners. Another team understood that they work in a very dispersed area with many small villages and don’t have a community space where children from all over the area could come together for STEM education camps and longer programs, and so the development of technological skills in their territory is inhibited. Youth skills fostering competitions and local forums have been identified among the acupuncture activities that could catalyze the development of learning and educational innovations in other areas.

<sup>224</sup> [https://www.ted.com/talks/jaime\\_lerner\\_sings\\_of\\_the\\_city/transcript?language=en](https://www.ted.com/talks/jaime_lerner_sings_of_the_city/transcript?language=en)

<sup>225</sup> <https://medium.com/praxis-blog/theory-of-constraints-106-the-five-focusing-steps-741f1b770bf1>

# 4.5

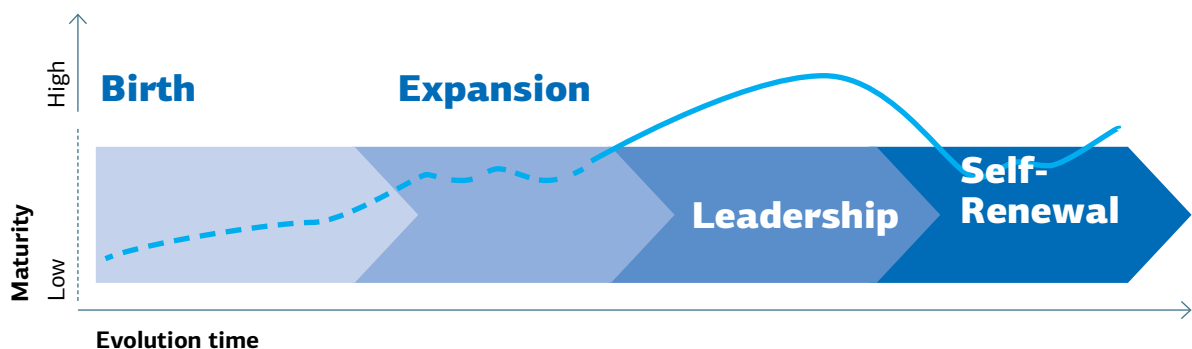
## Ecosystem Lifecycles

Like any complex and organically developing entity, ecosystems pass through various and distinct phases of their existence. There is a period of nascence or birth where an ecosystem only starts to emerge, there are a limited number of players (or founding participants) who are present at this stage, links between them are weak, the common vision only just begins to emerge and joint activities are scarce. This period is followed by a stage of growth or expansion, when many more players start to flow into the system, and many more joint projects and initiatives emerge. At some point, the inflow of new players and opportunities drops, as the system goes into a plateau, or maturity stage, which often assumes that a certain type of leadership is achieved. Within a mature ecosystem a system of relationships is much more stabilized as its main challenge

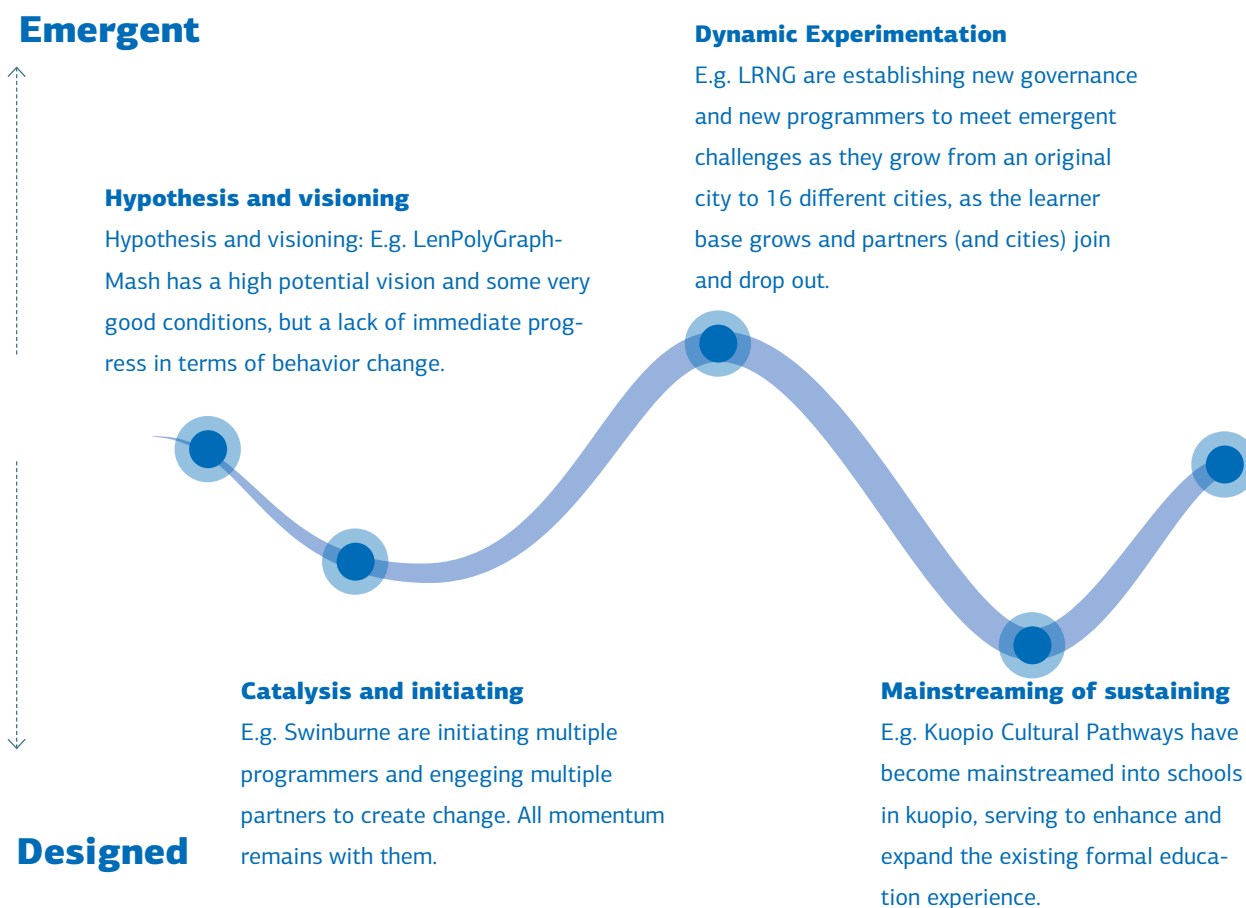
is to maintain indefinitely the dynamic status quo. Eventually, some ecosystems can face external disruptions (e.g. the rise of new education technologies or major changes in the economy and job markets) or even serious internal contradictions (e.g. a change in the generation of ecosystem leaders). Then they either enter a downwards dynamics of the decline and death, or they can begin redefining themselves and be reborn or (self-)renewed from within. For business ecosystems, these stages of a lifecycle have been explored in the seminal paper by James Moore (Figure 17).

The empirical analysis of Local Learning Ecosystems by the Innovation Unit has revealed that the majority of existing learning ecosystem cases exists at earlier stages of birth (hypothesis & visioning, and catalyzing & initiating phases) and growth (dynamic experimentation and mainstreaming phases). During each of these stages, the system fluctuates between ways of organizing that are more emergent and those require designed structure and action (Figure 18). Since none of the projects scrutinized has gone through the maturity and self-renewal stages, they are not fully covered in the model.

**Figure 17.** Stages of business ecosystem lifecycle as suggested in (Moore, 1993)<sup>326</sup>



<sup>326</sup> As presented in [https://www.researchgate.net/publication/324942808\\_The\\_Emerging\\_Role\\_of\\_the\\_Ecosystems\\_Architect](https://www.researchgate.net/publication/324942808_The_Emerging_Role_of_the_Ecosystems_Architect)



**Figure 18.** Innovation Unit's learning ecosystem lifecycle model

GEF ran an Ecosystem Accelerator in 2019 to develop ecosystems in practice. As part of this work the participants of the program explored the prospects of ecosystem development at various stages of the ecosystem lifecycle. In previous sections of this report we have mostly scrutinized approaches derived from the practical experience of learning ecosystem leaders. However, it is important to note that the majority of their projects still exist in stages of early or active development. Therefore it's important to explore, in the form of a collective hypothesis, how can the leadership and collaborative roles and challenges evolve as the ecosystems continue to develop on its cycle. We share the insights below as an early finding to provoke further collective exploration of the elements of the ecosystem life cycle in learning and beyond. The four stages of a lifecycle (birth-growth-ma-

turity-death) are classical stages. We invited the GEF Ecosystem Accelerator participants to explore the evolution of ecosystem leaders tasks and approaches across these various phases. Table 10 indicates how the main leadership challenge lies in redefining models of governance and communication at different stages, as well as the types of competencies and attitudes required. While every stage indicates governance approaches and competencies that become critical at this stage, it should be seen as also a cumulative list, that those from earlier stages are either built upon, embedded or also included dependent on the ecosystem.

Stage of the Life Cycle	Main Challenges for Ecosystem Leaders	Models of Governance & Communication	Leadership Team Competences & Attitudes
<b>Birth</b>	<ul style="list-style-type: none"> <li>▪ Begin the process of ecosystem creation</li> <li>▪ Identify &amp; involve the founding members of the community</li> <li>▪ Set up common goals</li> </ul>	<ul style="list-style-type: none"> <li>▪ Initiation</li> <li>▪ Building the founding members group</li> <li>▪ Discussing and aligning visions</li> <li>▪ Mapping opportunities</li> <li>▪ Catalyzation</li> <li>▪ Searching for ways to collaborate</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proactive behavior, courage, readiness to act</li> <li>▪ Openness, tolerance &amp; readiness to cooperate</li> <li>▪ Trust building and collaboration</li> <li>▪ Negotiations and partnership building</li> <li>▪ Visionary &amp; charismatic leadership, ability to engage</li> </ul>
<b>Growth</b>	<ul style="list-style-type: none"> <li>▪ Engaging &amp; weaving together the critical mass of the ecosystem</li> <li>▪ Design structures/ processes/ protocols that unite the ecosystem</li> <li>▪ “Show traction” with real achievements &amp; initiatives</li> </ul>	<ul style="list-style-type: none"> <li>▪ Creating and telling stories</li> <li>▪ Designing roadmaps</li> <li>▪ Creating protocols for communication &amp; collaboration</li> <li>▪ Prototyping &amp; experimenting</li> <li>▪ Finding resources for implementation</li> <li>▪ Coordinating and connecting the community horizontally and vertically</li> <li>▪ Creating/analyzing “digital footprint”</li> <li>▪ Building the critical mass</li> <li>▪ Scaling up</li> </ul>	<ul style="list-style-type: none"> <li>▪ Design thinking, project designing and planning</li> <li>▪ Community building, cross-team partnerships</li> <li>▪ Creativity, imagination and play</li> </ul>
<b>Maturity</b>	<ul style="list-style-type: none"> <li>▪ Increase unity and connections</li> <li>▪ Optimize and streamline processes</li> <li>▪ Encourage influx of new projects and ideas from within and outside</li> </ul>	<ul style="list-style-type: none"> <li>▪ Standardization/template design</li> <li>▪ Platform building</li> <li>▪ Unifying initiatives</li> <li>▪ Challenging status quo</li> <li>▪ Maintaining opportunities for experimenting</li> <li>▪ Competitions &amp; acceleration programs</li> <li>▪ Using data/measurement to optimize/renew</li> <li>▪ Introducing/activating new processes &amp; projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Systems thinking</li> <li>▪ Maintaining unity</li> <li>▪ Understanding and sharing other leaders’ stories</li> <li>▪ Fairness in distributing resources &amp; opportunities</li> <li>▪ Letting the way: mentoring, readiness to encourage &amp; support other leaders’ initiatives</li> <li>▪ Reflection tools</li> </ul>
<b>Death or rebirth</b>	<ul style="list-style-type: none"> <li>▪ Recognize the dynamics of dying — let go or relaunch</li> </ul>	<ul style="list-style-type: none"> <li>▪ Disseminating stories/ knowledge</li> <li>▪ Reusing/recycling resources</li> <li>▪ Archiving/storing artifacts</li> <li>▪ Relaunch (if possible)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Creativity in finding new ways of being</li> <li>▪ Knowing when to leave/close the project</li> <li>▪ Letting go</li> <li>▪ Being grateful</li> </ul>

**Table 10.** Leadership challenges, governance & team competence models across the ecosystem lifecycle

The next table (Table 11) highlights the various types of infrastructure that is typically required at every stage of ecosystem evolution. We look at the technological, institutional, physical, and financial infrastructural resource that is required to develop learning ecosystems.

As learning ecosystems evolve, so should learners, learning institutions, and ecosystem leaders themselves. Our challenge is to remember that we are dealing with these various phases of development of a complex

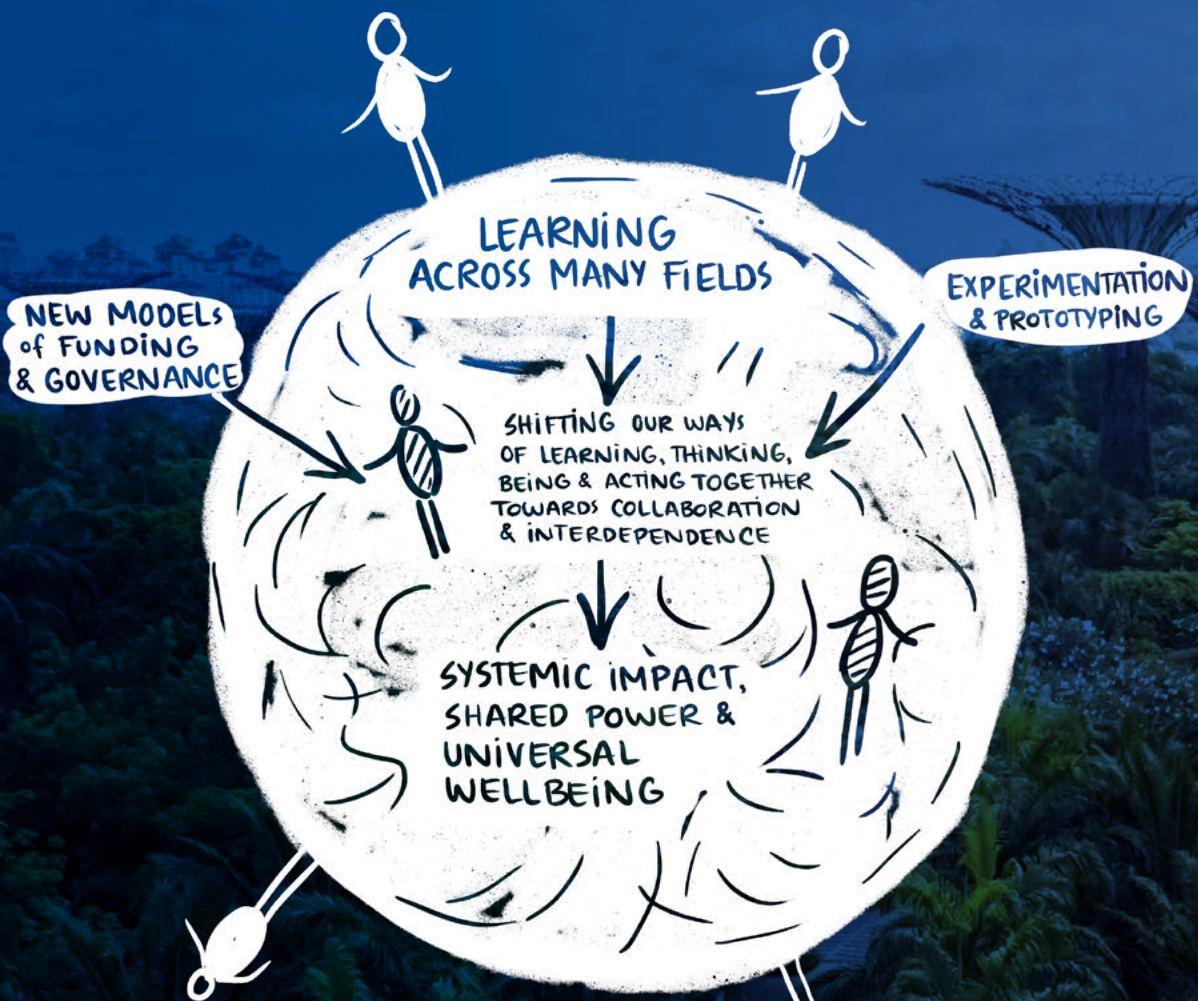
system that we aim to catalyze. We must remember that we need to let go of limiting ways of being that may have been used in the past. The concept of unlearning, for example, is becoming a popular one for this reason. The latest 2019 WISE gathering was focused entirely on bringing different stakeholders in education to explore this together.<sup>327</sup> Ecosystem leaders must evolve to become a positive force of collective evolution. ■

Stage	Technological infrastructure	Partners institutions	Physical infrastructure	Funding
<b>Birth / initiation</b>	<ul style="list-style-type: none"> <li>▀ Social media, chat groups</li> <li>▀ Calendar / group work planning</li> <li>▀ Crowdfunding platforms</li> </ul>	<ul style="list-style-type: none"> <li>▀ Informal communities</li> <li>▀ Clubs</li> <li>▀ Universities</li> <li>▀ Community centers</li> </ul>	<ul style="list-style-type: none"> <li>▀ Coworking spaces</li> <li>▀ Free public areas/cafes</li> </ul>	<ul style="list-style-type: none"> <li>▀ Grants</li> <li>▀ Crowdfunding</li> </ul>
<b>Growth</b>	<ul style="list-style-type: none"> <li>▀ New media platforms</li> <li>▀ Assessment platforms (e.g. badges)</li> </ul>	<ul style="list-style-type: none"> <li>▀ Government development agencies</li> <li>▀ Marketplaces</li> <li>▀ Startup accelerators</li> <li>▀ Corporations</li> </ul>	<ul style="list-style-type: none"> <li>▀ Learning hubs</li> <li>▀ Prototyping spaces &amp; labs</li> <li>▀ Technoparks</li> </ul>	<ul style="list-style-type: none"> <li>▀ Business angels/VCs</li> <li>▀ Government funding</li> </ul>
<b>Maturity</b>	<ul style="list-style-type: none"> <li>▀ Integration platforms</li> <li>▀ AI / data analytics</li> <li>▀ Knowledge management</li> </ul>	<ul style="list-style-type: none"> <li>▀ Local &amp; national government</li> <li>▀ Large companies, esp. in ICT sector</li> <li>▀ Sectoral councils</li> <li>▀ Trade unions</li> </ul>	<ul style="list-style-type: none"> <li>▀ Office spaces</li> <li>▀ Public spaces (incl. parks &amp; roads)</li> </ul>	<ul style="list-style-type: none"> <li>▀ Loans</li> <li>▀ Equity</li> </ul>
<b>Death or rebirth</b>	<ul style="list-style-type: none"> <li>▀ Archives</li> </ul>	<ul style="list-style-type: none"> <li>▀ Libraries</li> </ul>	<ul style="list-style-type: none"> <li>▀ Memorials/museums/rituals</li> </ul>	<ul style="list-style-type: none"> <li>▀ Grants</li> </ul>

**Table 11.** Requirements for infrastructure across the ecosystem lifecycle

<sup>327</sup> <https://www.edsurge.com/news/2019-10-07-what-we-need-to-unlearn-and-relearn-to-thrive-in-the-future>

# THRIVABLE FUTURES FOR PEOPLE, PLACES & OUR PLANET



EXPLORE - ACT - LEAD  
REQUIRES COURAGE & STAMINA



# 5

## Rising Momentum

This report outlines the growing emergence of learning ecosystems as a praxis around the world. Based on the insights of research contributors and prototyping initiatives we understand learning ecosystems to be intentional webs of relational learning which are dynamic and evolving while enabling wellbeing and equity throughout lifelong learning. The purpose of learning ecosystems are to offer pathways for learners to actively co-create thrivable futures for people, places and our planet. As we have seen, the shift towards an ecosystem approach is not only happening in learning and education, but across many fields of human endeavor. Ecosystem approaches allow us to shift our ways of learning, thinking, being and acting together toward collaboration and interdependence. In education, this is a shift toward a more interconnected and complex way of learning that has the potential to reorient traditional education systems away from reinforcing harmful societal patterns toward the cultivation of complex webs of co-learning and co-creation. The following principles synthesized from this report findings are offered as potential organizing principles that can support creating the conditions for ecosystemic learning.

# 5.1

## Emerging Principles For Learning Ecosystems

The following principles are offered as a guide for catalyzing learning ecosystems and are a starting point from which to learn more as our understandings of learning ecosystems evolve:

**Principle 1: Ecosystems respond to a need, not a whim.**

Ecosystemic initiatives are founded on inter-relationship, integrity, and mutuality. They address deep needs that exist in and between communities. They constantly seek ways to generate more variety, opportunities, and impact in ever efficient ways (e.g. in terms of cost, or speed of delivery, or speed of adaptation).

**Principle 2: Ecosystems emerge and exist at the connection of personal, local (place-based) and glocal (planetary) dynamics, needs, and purposes.**

**Ecosystems are Interrelated:** learning ecosystems emerge and evolve on multiple levels at the same time: personal (intra/inter), local (place-based), and glocal (societal/planetary). In bringing integrity to the inter-related dynamics, needs, and purposes at play in ecosystems they can become pathways for

(non-violent and collaborative) societal transformation at multiple scales.

**Principle 3: Ecosystems foster systemic impact.**

Ecosystems, by virtue of their multi-stakeholder and interdisciplinary nature create “ripples” of change and innovation that include and transcend local systems to include adjacent systems over multiple time frames, short, medium and long term which can translate into both broad and deep impact.

**Principle 4: Conscious choice of economic models.**

The economic dimension of learning ecosystems at their best aim to (a) Prioritize models that make the ecosystem and its actors economically viable in the long term; (b) Equitably distribute value and decrease market distortions that harm stakeholders; (c) Align incentives to support sustainable and regenerative evolution.

**Principle 5: Shared power and governance.**

Organising learning ecosystemically requires justice, diversity, equity, and inclusion to be at the heart of and determine the evolution of education rooted in relationships. Shared power, governance, and management of education processes, outcomes, and resources must benefit all for learning ecosystems to truly thrive. As a potential leverage point for societal transformation learning ecosystems must be “led” by all stakeholders and reflect intersectional power flows that foster diversity of learning in action.

**Principle 6: Learning on every level.**

Ecosystems must evolve within the limits of their functioning but provide whenever possible lifelong learning opportunities, prior-

itising not only the individual learning journey, but community, collective and planetary levels in the online and offline spheres. Learning on every level supports learning at every level concurrently.

**Principle 7: Whole being learning.**

We cannot co-create holistic learning ecosystems until all engaged by the system are able to be part of the process. This requires a myriad of approaches such as anti-racist, decolonial, and feminist pedagogy to inform and shape the trajectory of learning pathways. Whole being learning requires us to become whole beings, healing, learning, and transforming together ourselves, our places, and our relationship to each other and the planet.

**Principle 8: Future-fit adaptive education.**

Ecosystems foster all key technological, social, cultural and environmental transformations by providing relevant content and learning methodologies. They also provide spaces for collaborative prototyping for future models of technology, economy, society, and culture within learning contexts. The content and the context of education must help develop meta- and existential competencies to adapt to future challenges and to (re)learn quickly whenever needed, as change is inevitable.

**Principle 9: Education that supports wellbeing.**

Ecosystems equip all with knowledge and practices to take care of personal, and collective, physical and mental health and wellbeing and create an environment that ensures the personal health and wellbeing of every member and overall health of the community and planet.

The above principles can serve as guidelines for emerging practices as we explore how ecosystemic approaches to living, working, and being in intentional learning relationships can foster opportunities for transformative change. We can expand our practice at the personal, planetary and place-based levels (See: PPP mapping Appendix 3.), while at

the same time enabling our organisations to become increasingly ecosystemic (See: CORE Appendix 4.). As identified by the contributing ecosystem leaders featured in this report the application of the above synthesis principles can foster the following outcomes at the personal, place-based, and planetary levels:



## Personal

- a. Improved self care and wellbeing
- b. Connection to self, local community and wider world
- c. Increased individual value, purpose and meaning
- d. Personal sustainable income generation
- e. Greater mastery through lifelong learning pathways
- f. Passionate changemakers
- g. Holistic growth
- h. Establish significant connections with nature and living systems



## Place-based

- a. Enable potential for all
- b. Foster skills and opportunities for all
- c. Develop diverse lifelong learning experiences
- d. Create networks of support
- e. Reveal collective wisdom feeds community
- f. Engage with democracy and citizenship
- g. Facilitate changemakers
- h. Enhance innovation



## Planetary

- a. Increased systemic changes to overcome collective challenges
- b. Recognition of unique purpose and capabilities of humans
- c. Linked together different ways of becoming
- d. Greater equity, inclusivity & diversity
- e. Cultivation of processes of healing
- f. Unlocking of universal wellbeing
- g. Developed collective consciousness
- h. Evolved connective and collective intelligence for collective wisdom & growth
- i. Creation of the skeleton/nervous system of the global civilisation

# 5.2

## Co-creating the Practice of Learning Ecosystems



### Teachers, Educators, and Innovators:

#### Explore:

Learn about new methods of teaching and ecosystemic educational practices using resources such as ASCD<sup>329</sup>, WISE, Innovation Unit, Ashoka, HundrED, Brookings Institute, Edutopia, Teaching Tolerance. Engage yourself in change oriented courses, e.g. TheoryU. lab MOOC. Engage in training to become a facilitator of conversations and innovation labs in your own institution or community. Map your own personal, place and planetary ecosystem (see PPP approach Appendix 4). Deepen relationships by

As this report suggests, given appropriate enabling conditions, there are many different ways people can take steps towards cultivating ecosystemic learning from expanding one's consciousness toward an interconnected worldview to developing transformational learning pathways for strategic sustainable development<sup>328</sup>, whilst others may focus on developing justice oriented capacities for collaboration. This journey invites us all to explore opportunities for building relational learning, to enact or practice embodying ecosystemic learning through experimentation and prototyping, and finally to lead and co-create communities and projects that cultivate local and global learning ecosystems. The list below offers some possible action steps for some typical roles within learning ecosystems:

#### Act:

exploring and developing ways to deepen your connections with co-workers and the community. Begin conversations in your own learning institution about a possibility to cultivate your own learning ecosystem. Understand the needs of your learners and your community partners. Prototype collaborative formats and learning communities.

#### Lead:

Begin your own community of practice to connect learning to local place, opportunities for personalisation and passion, rhythms and rituals, development towards emerging new facilitation styles.



### Organizational Leaders:

Map your actual and possible partners with tools such as group map, mural, miro and kumu, learn about new leadership styles such as teal organizations and holocracies, and develop your own capacity in community building.

Bring and model the cultural shift within your own organization using the CORE ecosystem enablers (see Section 3.1). Intentionally expand the diversity of relationships of your organization and begin weaving the community around it.

Cultivate the conversation between leaders in your area or your sector how to become more ecosystemically oriented. Prototype your own ecosystem acceleration processes, and develop the capacity of your team to organize ecosystems.



**Young People, Parents, Families:**

**Explore:**

Map your learning needs and your own ecosystem (See PPP Appendix 3.). Explore the current and long-term interests and demands of your peers and your family that can become your partners in learning. Understand opportunities for your learning that exist in your local area — and those that might exist nationally, globally, or online. Engage in a course on “learning to learn” (e.g. the one by Barbara Oakley).

**Act:**

Start building your own learning circle or community around the topics you like. Engage in collaborative activities within your ecosystem that would connect people from many circles and organizations, such as learning festivals.

**Lead:**

Organize a peer-to-peer learning event (e.g. a conference, a camp, or a game) for your friends or your community. Help others to map their ecosystem, and co create a local map online with tools such as LocalWiki.



**Funders:**

Learn about new models of funding that allow the support to ecosystemic projects<sup>328</sup>. Understand your preferred ways of measuring success in such comprehensive projects with multidimensional impact.

Create long term approaches to funding projects that emphasize the relationship building within your own ecosystem and cultivate your own community of impact. Create opportunities for partnerships and alliances that will distribute the power and resources within your ecosystem more efficiently and equitably.

Share and showcase benefits with other funding bodies. Create sectoral dialogues on new models of impactful funding.



**Policy Makers:**

Find out about new models of governance for complex education systems (e.g. the OECD work on this topic<sup>329</sup>). Engage grassroots leaders and embrace multi-stakeholder oriented approaches to policy making. Build authentic relationships, spanning party lines. Cultivate long-term purpose oriented communities of practice that can stand behind policies you institutionalize.



**Researchers:**

Explore and create research-informed ways to understand the emerging field of learning ecosystems. Help better understand ecosystem ontology and methods of measuring ecosystems. Consider the impact of your research on various types of players within ecosystems, and support pathways for transition for various stakeholders, including funders, policy makers, organizational leaders, and others.

<sup>328</sup> <https://www.diva-portal.org/smash/get/diva2:830252/FULLTEXT01.pdf>

<sup>329</sup> <http://www.ascd.org/Default.aspx>

<sup>330</sup> <https://socialinnovationsjournal.org/editions/finance-3/76-featured-social-innovations/2991-from-philanthropy-to-social-investment-funding-the-ecosystem>

<sup>331</sup> <http://www.oecd.org/education/cei/gces.htm>

# 5.3

## Final Reflections

In the words of Buckminster Fuller “Out of my general world-pattern-trend studies, there now comes strong evidence that nothing is going to be quite so surprising or abrupt in the forward history of man as the forward evolution in the educational processes.”<sup>332</sup> Our hope is that the work of those featured in this report illuminates the emerging praxis of learning ecosystems as a radical shift in how we learn and lead together in the 21st century advancing the evolution of education and learning. “Each unique wave on the ocean is created by the coming together of the swell, resulting sometimes from storms that happened days before and thousands of miles away.”<sup>333</sup> Whilst at times it may seem that embracing ecosystemic learning makes our work more complex and challenging, in fact embracing complexity<sup>334</sup> and embracing future possibilities is a much more aligned way of

navigating the complex dynamics before us. Learning ecosystems modeled after organic complex adaptive systems aim to offer learning pathways that are congruent with our 21st century complexifying context. The journey of creating learning ecosystems requires courage and stamina, the interrogation of our perspectives, our shared narratives, and current structures and patterns across societal systems. It asks much from us and our communities, and it invites work that can span generations. This report has outlined the indicators of learning ecosystem’s emergence in the field, their purposes, the elements that can enable and currently hinder them as well as the roles and leadership required to cultivate them at the personal, place, and planetary levels. In the face of ecological, social, economic, and cultural crisis and opportunities, we need ecologies of learning that foster collective benefit and evolutionary viability. The enthusiasm with which research contributors shared their successes and failures in the continued work of co-creating learning ecosystems suggests to us that learning ecosystems may provide pathways of hope and possibility for the future of learning. The future is ours to co-create. ■



**Jessica Spencer-Keyse**



**Pavel Luksha**



**Joshua Cubista**

Moscow / London / Toronto, 2019-2020

<sup>332</sup> [https://books.google.ca/books/about/Education\\_Automation.html?id=JSeOPgAACAAJ&redir\\_esc=y](https://books.google.ca/books/about/Education_Automation.html?id=JSeOPgAACAAJ&redir_esc=y)

<sup>333</sup> <https://www.opendemocracy.net/en/opendemocracyuk/embracing-complexity-towards-fairness-sustainability-and-happiness/>

<sup>334</sup> <https://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780199565252.001.0001/acprof-9780199565252>

“

We understand learning ecosystems to be intentional webs of relational learning which are dynamic, evolving, and enable greater diversity when fostering lifelong learning opportunities. The purpose of learning ecosystems are to offer pathways for learners to actively co-create thriving futures for people, places and our planet.

”



# Afterword: January 2020



By **Victoria Haro**,

Co-founder & Lead Weaver University of the Environment: Mexico (UMA) & Co-founder The Weaving Lab

This report represents a learning ecosystem researching itself. The resulting framework has two characteristics I find particularly valuable:

a) It was created by identifying patterns in the reflections of practitioners experimenting with the ideas behind the framework. Hence, the Learning Ecosystem Principles proposed are not an ideological construct, but rather the description of a pattern arising from practice.

b) It offers a set of specific and simple application experiments, with an open invitation to co-create the framework further. In service to co-designing conditions for thriving learning ecosystems, I would like to share some key ideas and questions I believe are useful to bear in mind while experimenting with the framework<sup>335</sup>.

## Diversity

Calling a project, an organization or community an *ecosystem*, emphasizes diversity as well as the inclusion of nature. Firstly, this means appreciating the need for diversity in order to widen the scope of roles, perspectives and interactions that increase the resilience, creativity and critical revision of the system. Secondly, it implies inviting any actor that has a relevant influence on the system's goals. For example, inviting parents, students and educational authorities alongside teachers to reflect upon the learning process of a school. Thirdly, it calls for involving nature, beyond the human species, not only as beneficiaries of our efforts, but also as members of the system. In what creative ways may they be represented? How can we learn from them?

Diversity is more easily proposed than achieved. By ordinary paradigms, it may be uncomfortable for a school to be transparent with mistakes or doubts with parents, students and authorities. Moving to sharing responsibility, co-designing, and thinking on nature as partner, is a journey. Moreover, many views today are closed to diversity, proclaiming that everyone should live basically in the same way, whether that means following the same religious beliefs or eating habits. Indeed, diversity tends to be more of a counterculture experience than it seems. Permitting diversity implies accepting more complex agreements and solutions, as well as decision processes based on evidence rather than ideology.

## Learning

Becoming a *learning* ecosystem implies having explicit and systematic processes to identify, reflect and share how to better reach and live for a common purpose. An ecosystem is not a learning system by default: learning requires design. It also requires time and organization. And lots of joyful patience. Humans and their organizations are always learning – but efficient, interconnected learning requires process, documentation, measurement, and above all, collaborative reflection time. We are still figuring out what does a learning community process really entail. What should our expectations be? How do we create the time for it? What processes work and are fun and effective? How do we make it as simple as possible and still significant?

<sup>335</sup> I also have curated thought-provoking articles to accompany some of the ideas, for those interested in delving further.

### **Interrelated wellbeing**

The learning ecosystems framework proposes as meta-purpose the interrelated wellbeing of self, community and nature. What wellbeing means is of course at the heart of each ecosystem's research, but the crux is in the interrelations between the personal, social and planetary dimensions. How does my wellbeing really connect with other's wellbeing? If I walk in the forest for meditation, is this promoting the wellbeing of nature too? How do we develop deliberate practices for interrelated wellbeing?

A learning process for interrelated wellbeing in an organization may begin, for example, by asking its respective members what are their wellbeing practices for self, community and nature. Then invite them to find inter-connections. Afterwards, the community can collaborate to find patterns of practices and relations, revealing the wellbeing culture of the group. This then permits the organization's community to better its practices, intentionally, thereby coevolving its culture. This experience at UMA has brought powerful results and changes through the awareness of how weak the interconnection of our wellbeing practices tends to be.

### **Impact, scale and scope**

All of the above implies that a central invitation of the learning ecosystems framework is to direct more energy into relationships and learning. Whatever energy we are investing in these two realms, the invitation is to experiment with investing more. Maybe radically more. Not only in relationships and learning inside our ecosystem, but also with other ecosystems. The latter is an invitation to make a stronger bet on impact and change happening through networks of ecosystems, and not through individual organizations. This calls for directing attention to connections rather than to scale: growing relations instead of growing organizations. To become weavers.

In terms of the scope of the learning ecosystem movement or field, it appears important to envision a world where every family, neighborhood, school, organization, community, industry and government is a learning ecosystem for interrelated wellbeing; but it is just as important to be comfortable with the goal of a world where (some) learning ecosystems simply exist in a resilient, inter-connected and evolving way. This is already a challenging aim.

### **Risks**

There are many interesting challenges for learning ecosystems to thrive, but I would like to address four risks that seem especially important. They refer to broad cultural phenomena within the context where learning ecosystems are emerging. They have a double feature: they are risks to be avoided, but also represent cultural references that must be transformed if we are to aim for a world of peace and learning – or at least bubbles of it. I believe the learning ecosystem movement is a powerful means for this.

#### a) Superficiality in learning:

Many of our formal learning processes are full of superficiality: ephemeral memorization, de-contextualization, false consciousness. Learning ecosystems however require a culture of deep inquiry and reflection. This is not only about transcendental and fun processes. There is another, less noted point: there is no clear way to identify if our knowledge on a subject is superficial except by submitting it to continuous and rigorous testing through individual and collaborative inquiry as well as evidence gathering. Evidence is not necessarily technical data that can only be gathered by specialists, but also encompasses experience and information gathered through 'simple' (i.e. not expert) ways. This scientific approach fine-tunes our systemic understanding, but more importantly, it inhibits the declaration of unfounded (or not carefully

thought) propositions. The power of the scientific approach as an antidote for superficiality is frequently undermined by the view that it is the business only of scientists, that it has produced an extractive relation to the world, that it only addresses material phenomena or that it is divorced of intuitive or experiential processes<sup>336</sup>. However, none of these claims has to do with the scientific method itself, but rather with a materialistic, expert-isolated, unethical and non-integral application of it (which is, to be sure, quite extended)<sup>337</sup>.

Moreover, the scientific process entails some helpful features which are often misunderstood. For example, it implies a skeptical attitude whereby all knowledge is held as a hypothesis (not immovable truth) that may be overthrown at any time by new evidence or a better hypothesis. A true scientific approach also welcomes diversity and dialogue. Indeed, its very essence is to promote different views. Learning ecosystems could train and expand a ‘citizen’ scientific approach that fosters deeper knowledge as well as freedom, since it implies that no recourse to the faith of an established dogma is accepted as valid, skeptics are always welcome, and no argument is held to be above the test of evidence.

#### b) Worldview fanaticism:

Fanaticism is a behavior involving uncritical zeal to impose worldviews, actions and lifestyles on others. It totally impairs learning, diversity and evolution, whilst promoting violence. The human cultural tendency towards fanaticism, religiosity, and self-righteousness is strong<sup>338</sup> and should be taken seriously in any learning ecosystem design, particularly when directed to interrelated wellbeing. The development of reflective practices and the incorporation of a scientific style in learning experiences help weaken fanaticism, but it needs to be addressed explicitly to avoid any concepts of wellbeing being imposed on others, as well as to undercut its advance in the world. Moreover, ‘scientific fanaticism’ is also possible. This for example happens when a majority opinion

among scientists is elevated into a dogma, when non-intellectual experience is deemed invaluable in principle, or when scientific endeavor is constrained by dogma to certain axioms or areas of inquiry –in short, when a true scientific approach ceases to operate<sup>339</sup>.

#### c) Fear as incentive:

Fear is an expected consequence of looming socio-environmental crisis. Fear may be an effective catalyst of action; however, action emerging from fear without understanding is prone to fanaticism. It is worrisome that fear is being used in many instances (unintentionally and intentionally) as a medium for social and environmental awareness and action<sup>286</sup>. The use of fear as a catalyst for action does not honor human dignity and sets the ground for manipulation. Fear is often transformed into anger, and this nurtures dogmatic thought. On the other hand, fear may also be a paralyzing force. Recently, fear of the world in general and of wilderness in particular, have been detected as a rising problem, particularly in children (ecoanxiety and biophobia<sup>340</sup>). Learning ecosystems should take care of avoiding fear as motivator or seed, as well as explicitly addressing and discouraging the general culture of fear, so that the endeavor for interrelated wellbeing is possible. This does not imply evading problems face-to-face, which is a requirement if we are to solve them. It just means not using fear to make them visible; for example, though exaggerating phenomena to call attention<sup>341</sup>.

<sup>335</sup> Acosta, Alberto (2013). “Extractivism and neo-extractivism”, pp 61-87 in *Beyond Development: Alternative Visions from Latin America*.

<sup>336</sup> Sheldrake, Rupert. (2013). *Setting Science Free From Materialism*. New York: Explore

<sup>337</sup> Tormey, Natacha (2017). *Cults: A Bloodstained History*. USA: Fonthill Media

<sup>338</sup> Adam Klein (2017). *Fanaticism, Racism, and Rage Online: Corrupting the Digital Sphere*. USA: Springer

<sup>339</sup> Yu-Kang Lee Et al (2017). What Sells Better in Green Communications: Fear or Hope? *Journal of Advertising Research*, December. Cegarra, Laura (2017). “Extending Environmental Ethics through Fear”. *Harvard University-Sustainability*.

<sup>340</sup> Ulrich, Roger. (1993). “Biophilia, biophobia, and natural landscapes”, pp. 73-137 in *The Biophilia Hypothesis*, Island Press.

d) Disregard or undervaluation of the human species:

Learning ecosystems value the human potential for promoting interrelated wellbeing. However, there are some views that endorse a negative and contemptuous perspective of humans. For example, the view of humans as virus and parasites of Earth<sup>342</sup>, the view of humans as irremediable destroyers, or the view of Nature being better off if humans went extinct<sup>343</sup>. These views may promote practices where human wellbeing is not highly valued, and also have psychological costs to our self-esteem as humans, sometimes even promoting inter-generational hostility by convincing children and adolescents that older generations have failed them.

These views disconnect humans from comprehending ourselves as part of a species in evolution, seeking adaptation to changing conditions. Instead, it infuses us with a consciousness-undermining process of guilt and anger. The evolutionary view, in which the human species is seen as immersed in continuous adaptation-learning processes through time and history, strengthens human dignity and creativity, and thereby fosters the possibilities of conscious cultural evolution. An explicit evolutionary view therefore seems to be useful and appropriate for learning ecosystems. Note that this view does not imply justifying those who intentionally have harmed others. Its outlook is at a species and cultural level.

## Opportunities

There are also many rich opportunities to harness in the general context of learning ecosystems emergence. Again, I will refer to four I see as particularly special. They all have the potential of firing the ecosystem movement with available and free energy.

a) Cultural appropriation of interdependence: The concept of interdependence is gaining unprecedented cultural ground, providing fertile soil for learning ecosystems, which are all about collaboration and interconnection. Several cultures have developed a deep understanding of interdependence (as some Native American tribes, for example<sup>344</sup>), and some philosophical traditions have highly sophisticated theories of it (the Buddhist traditions, for example<sup>345</sup>); what is unprecedented is how widespread this idea is now becoming, due to a heightened understanding of ecological interdependence and biological evolution. Grasping the phenomenon of interdependence is fundamental to understanding what is to be human, as well as foundational for appreciation of other humans, other species and the rest of nature. This is all essential to the emergence and cohesion of learning ecosystems.

b) Internet as a network blueprint:

The internet makes possible that individuals and learning ecosystems exchange information and experiences, thereby increasing possibilities of adaptation and survival, both for ourselves and other species. This is an unprecedented opportunity. Moreover, the very structure of the internet, resilient and self-emergent with millions of connected nodes of information, is a blueprint for the formation of a global web of learning ecosystems. To fully seize this opportunity, learning communities and individuals must increase the quality of the learning experience that internet facilitates. Indeed, the internet is such a new feature of our society that there is still a feeble culture of scientific inquiry and dialogue helping distill and organize the enormous amount of information to which we now have access. We

<sup>341</sup> John C Briggs (2017), Emergence of a sixth mass extinction? *Biological Journal of the Linnean Society*, Vol. 122, Issue 2, pp 243–248

<sup>342</sup> Pauly, Daniel (2014). Homo sapiens: cancer or parasite? *Ethics in Science and Environmental Politics*. Vol. 14: 7–10

<sup>343</sup> Knight, Les. The Voluntary Human Extinction Movement: <http://www.vhemt.org/>

<sup>344</sup> Verbos, Amy & Humphries, Maria. (2013). A Native American Relational Ethic. *Journal of Business Ethics* No. 123.

<sup>345</sup> Bhikkhu, Thanissaro (2016). We Are Not One: Interdependence is not what you (and many others) may think. *Tricycle: The Buddhist Review*.

need to foster methodologies to differentiate valuable information from propaganda, misinformation and half-truths. This capacity need not be left to specialists but can be built into the consciousness of all members of learning communities. The creation of online systems of collaborative inquiry is crucial to maximize creative innovation and research. Projects like Wikipedia have proven that there is enormous will from ordinary citizens to participate in the generation of public knowledge. Thus, platforms designed for collaborative inquiry within a ‘citizen’ scientific process would imply a valuable evolution of human collaboration.

c) Cornucopia of alternative learning systems:

As this report has shown, there is a notorious growth of alternative educational systems generating diverse proposals for meaningful, non-hierarchical, systemic learning processes. These are all useful references for learning ecosystems. So although we are still exploring viable (and joyful!) ways to make an ecosystem a learning system, there is an abundance of possible processes that are being documented and enthusiastically shared<sup>346</sup>. Learning ecosystems may harness this growing culture, experimenting with methods and tools of the alternative schools, while emphasizing diversity and interrelated wellbeing, as well as moving the learning ecosystem model outside of schools and into organizations, neighborhoods, cities and governments.

d) Interest for more holistic lifestyles:

The joy, need and possibility for developing integrally our human emotional, intellectual, spiritual, artistic, social and physical dimensions, has been strengthening as new human development and learning models raise the value of holistic development for our wellbeing.

Additionally, neuroscience and contemplative traditions have recognized the plasticity of our brain and its continuous ability to learn and be transformed<sup>347</sup>. This expels the idea that we are born with a determined and unchangeable level or quality of intelligence (as IQ tests pretend to measure<sup>348</sup>), or that we have the capacity to develop only some of our dimensions but not all of them. Learning ecosystems can connect to the holistic developmental aspiration, as well as apply it to the research of interrelated wellbeing: what could be a holistic development of a community or of the planet?

### **A vision of future**

The possibility of a world full of interconnected learning ecosystems that share the common interest of interrelated wellbeing across diverse cultural, religious, economic and political paradigms, is invigorating and encouraging. It also seems our best bet as a conscious cultural evolutionary strategy. Learning ecosystems that foment creativity and diversity while promoting accords are essential if we are to thrive. Diverse universes of inquiry where differences are resolved through evidenced-based processes have a good probability of emerging if superficiality, fanaticism, fear and undervaluation of the human species are forestalled; as well as if we harness and enhance the awareness of interdependence, the internet blueprint for human networks, the abundance of alternative learning processes, and the interest for holistic lifestyles.

A human mind, as a system of connected neurons, is already a learning system where creativity and diversity may flourish while simultaneously resolving differences. This neurological system also somehow permitted the emergence (or expression) of consciousness. One can only wonder at the potential of a larger, emergent system of “neurons” in the form of learning ecosystems around the globe. ■

<sup>346</sup> HundrED: Hub of global education innovations: <https://hundred.org/en>

<sup>347</sup> Harth, Ed. (2018). The Feuerstein perspective on the modification of cognitive performance, in *Focus on Exceptional Children* 15(3).

<sup>348</sup> Kamin, L. J. (1974). *The Science and Politics of IQ*. Potomac, Maryland: Lawrence Erlbaum Associates.

# About the Authors

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Pavel Luksha is a global thinker, change catalyst, and facilitator working with systemic social innovations in education, business, social entrepreneurship, culture, and urban development. Pavel is the founder of Global Education Futures initiative, co-founder of the Voice of Youth initiative and TeenStart youth entrepreneurship program, the Fellow of World Academy of Art & Science, and the founding member of Future of Capital and Living Cities movements. Pavel is also the Professor at Moscow School of Management SKOLKOVO and at the Technological Institute of Buenos Aires (ITBA). Pavel sits on the Supervisory boards of the University 20.35, FutureHow, and EcoClass, on the Advisory boards of Whittle Schools & Studios and Laszlo Institute for the New Paradigm Research, in the Wisdom Council of The Weaving Lab, and in the Expert Council of the Russian Agency for Strategic Initiatives.

He also leads the Education working group of Global Leadership for 21 Century initiative (cofounded by UN Geneva Office and World Academy of Art and Science), Transformation of Consciousness working group of the Future of Capital, and co-leads the Future Skills R&D Alliance of WorldSkills International. He is the member of BRICS Skills Development Working Group (and chaired it in 2015), and also is an expert of the International Labor Organization on Lifelong Learning.

Pavel is the co-author of the Rapid Foresight methodology used by thousands of futurists and practitioners in Russia and across the world, and in 2012-15 has been the program director of a globally unique Foresight Fleet (one of its 2017-18 spinoffs received Facilitation Impact Award), and also cofounded “Boiling Point” future cocreation spaces (currently 100+ spaces across Russia and FSU). He created the Atlas of Emerging Jobs, one of the most detailed global compendiums of new and emerging jobs, that has catalyzed systemic innovations in Russian education system and in several emerging economies. In 2009-13, he worked in technology innovation management education, authored Skolkovo-Rosatom program that received EFMD Excellence in Practice Award, and co-founded Russian R&D Directors Club. He also initiated and catalyzed NeuroNet initiative which since 2014 has become the major Russian R&D+i consortium in brain research and neural technologies.

He is the lead author of numerous Global Education Futures reports, including “Educational Ecosystems for Societal Transformation” (2018), “Future Skills: How to Thrive in a New Complex World” (2017), “Global Education Futures Agenda” (2014) (all available at [www.globaledufutures.org](http://www.globaledufutures.org)), and the “Atlas of Emerging Jobs”, one of the most detailed global compendiums of new and emerging jobs (available at [www.atlas100.ru/en](http://www.atlas100.ru/en)) — works that have catalyzed systemic innovations in Russian education system and in several emerging economies.

Pavel is a poet (published two books), an artist, a photographer, and an avid traveler. He is married and is a father of three daughters. He currently lives in Moscow, Russia.

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Jessica Spencer-Keyse is a transdisciplinary researcher, facilitator, writer, and artist co-creating learning ecosystems for thrivable futures. She identifies as a multipotentialite, but has particular experience within and across learning, ecosystems, education, psychology, youth, arts and innovation worldwide. She most recently produced two qualitative pieces of research, with Global Education Futures, the one above and another which shares insights on how schools and educational institutions can evolve and develop as learning organizations in collaboration with Whittle Schools and Studios and HundrED. Prior to this, she developed processes and frameworks to understand education innovations for impact and scalability at HundrED, interviewing 200+ of the most inspiring innovators of holistic learning worldwide. She sought insight from all stakeholders in this processes, an advocate for about inclusivity and diversity, highlighted in the Every Child to Flourish research report she wrote showcasing the voices of nearly 400 young people worldwide on what they feel needs to urgently improve in education, featured in Forbes as a 'stand out' piece for this reason.

She is a deeply passionate individual, currently focused on developing authentic, playful, relationships and embodied experiences for transformative learning. She does so at three levels: 1) one-to-one learning coaching experiences, particularly supporting those looking to overcome trauma from their education 2) regenerative research and 3) facilitating connective experiences in multiple stakeholder environments to support individual and collective growth, healing and societal evolution. She is currently immersed in a learning journey in London, exploring and facilitating with 12 other wonderfully curious humans, courtesy of Enrol Yourself. Other community learning include supporting and working with The Weaving Lab, an approach to leadership that relies less on hierarchical authority and centralised control, and more on curating circles, hosting conversations and building trusted relationships, as well as Challenge 59 and Sisterhood for whom she is on the Trustee Board. She is also intensely connected to dance, 5rhythms, poetry, journaling and meditation as practices which nourish herself, to nourish her work.

## Joshua Cubista



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Joshua Cubista is the Dean of The Social Innovation Institute in Toronto, Canada, and is an international experiential designer, facilitator and strategist focusing on personal, social, and systemic leadership capacity building. He has authored and co-authored multiple publications including: *Prototyping Our Future: Social Labs For A Sustainable, Regenerative & Thriving Future*, *Global Education Futures: Educational Ecosystems For Societal Transformation*, *Systems Change Education In an Innovation Context*, and *Designing Labs For A Sustainable Future*. Joshua is the founder of Evolution Lab, a design atelier offering experiential and experimental prototyping and innovation processes for organizations, communities and multi-stakeholder groups. Additionally, Joshua designed the *Permaculture For Systemic Change* course at Prescott College, and is a co-founder of Global Education Futures.

As a global citizen Joshua has lived and worked in 35+ countries including Japan, Canada, U.S.A, Europe, Mexico, China, and Kazakhstan, including diverse Eco-villages and Human Potential Education centers around the world. Joshua holds a MSc. in Strategic Leadership Towards Sustainability from BTH in Sweden, a B.A. in Sustainable Community Development and Integral Psychology from Prescott College, as well as being a Global Sustainability Fellow with The Sustainability Laboratory, and a Fellow with the Institute For Sustainable Social Change, The Biophilia Foundation, and The Academy of Systems Change.

Joshua is a research scholar at University of Guelph, exploring social practice, transformational change, and community engaged scholarship dedicated to leadership capacity building that addresses root causes of systems-level challenges. Current clients, collaborators, and research partners include: Turtle Island Institute, Social Innovation Institute, Social Innovation Canada, The McConnell Foundation, Global Education Futures, and Community Engaged Scholarship Institute. Joshua's work unites human potential, collaborative leadership, and systems approaches to co-creating optimal responses to the complex opportunities and challenges of the 21st century.





“

Ecosystem Thrivalists we believe are the life affirming leaders who serve and support the capacity building of learners and leaders within learning ecosystems. The work of ecosystem thrivalists is to foster learning and impact that goes beyond survival or subsistence toward thriving for all.

”

# Gratitudes

We would like to extend our deepest gratitude to Moscow School of Management SKOLKOVO, and the Head of SKOLKOVO Education Development Center Olga Nazaykinskaya in particular, for providing the opportunity and funding for this research. We also express sincere thanks to SKOLKOVO team members Olga Shakuro, Elena Ponomareva and Petr Tutaev for supporting the research process and providing ideas for understanding the work of ecosystem leaders. We deeply thank Erin Blanding, of Future Generations University, for her time and dedication as the report editorial and social justice advisor. This would not be possible without the active, authentic participation of educational leaders and researchers, particularly the 38 learning ecosystem projects and people who shared with us the privilege of learning their stories, dreams and motivations allowing us to gain deep insight into the complex and multifaceted work of ecosystem organizing. Your work is inspiring and transformational, so much of what we know can be possible for this new emerging education paradigm shines from your guiding light.

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of ecosystem weavers, hosting events and leadership educational experiences for them, and for developing a number of ideas and frameworks together with us on the nature of ecosystem organization. We would also like to thank the Russian Agency for Strategic Initiatives, NTI Platform, NTI STEM Clubs movement, and in particular Alexey Fedoseev, Dmitry Zemtsov, Mikhail Prosekin, Dmitry Peskov, Andrey Siling, Yulia Gudach, Oleg Grinko, Alexey Gusev, Kirill Soloveychik, Liana Kobzeva, and Levan Tatunashvili, and leadership teams from 11 regions of Russia, for their active participation and collaboration in the Global Education Futures (GEF) Ecosystem Accelerator held during Spring and Summer 2019. Also thank you to Mikhail and Daniil Kozharinov, Oksana Glazunova, Irina Bryuzgina and other members of the Ecosystem Accelerator team who helped co create and conduct the accelerator and develop its theoretical foundations. Ekaterina Luksha has made many contributions to the thinking and practice of learning ecosystems with Global Education Futures work in Russia, including the ongoing work with Yakutia region. Petr Tutaev and his Simulizator team have also worked hard to design learning ecosystems accelerator, while Dmitry Zabirotov and his Kazan team helped create the amazing ecosystem board game, both of which helped

strengthen our ideas for this report. Also, another great thank you to Lika Chekalova who participated in the early stages of this research and drafted some of its texts. We are also grateful for our collaborators at the Global Education Leaders Partnership and the cofounders, Valerie Hannon and Anthony Mackay, for their continuing commitment to the subject of learning ecosystems, and opportunities for many insightful conversations and collaborations over the years. The recent 2019 report by Valerie and her team at the Innovation Unit, “Local Learning Ecosystems: Emerging Models”, has served as one of the inspirations and the springboards for own work.

We deeply thank the global network of Global Education Futures collaborators, advisors, and sponsors who have provided us support over the years. Specifically, we would like to thank co-founder of GEF, Alexander Laszlo, whose current work in Argentina with Vivir Agradecidos foundation on cultivating multi-scale learning ecosystems is an exemplary manifestation and a prototype of frameworks presented in this report. As well as Anneloes Smitsman, Gaby Arenas, Vishal Tareja, Jan Owen, Zineb Mouhyi, Valentina Ramen and Alexander Asmolov for your inspirational work

on learning ecosystems around the world and your contributions to this report. Furthermore, we have been fortunate to gain feedback from a diverse group of ecosystem and education leaders including Luis Camargo, Lika Chekalova, Michael Crawford, Daniel Ford, Jordi Díaz Gibson, Karima Grant, Valerie Hannon, Alexander Laszlo, and George Pór for whom we thank for their thoughtful and important feedback on earlier drafts of this report. And, as always, we thank our families, friends, communities and dear partners for their patience, love and kind support that allows us to continue our work in the world.

We believe the emerging practice of learning ecosystems around the world represents a profound shift in how we learn together in the 21st century and beyond. We dedicate this report to the flourishing of all people, the places we live and learn together, and Earth, our home. ■

# Appendix 1

## Contributors

Short profiles written by contributors who were interviewed and/or shaped insights in this report:

### AkademPark

**What does your organisation/s do:** An ecosystem organizer for the learning and innovation ecosystem inside Akademgorodok, a scientific town in Novosibirsk State University, Siberia Division of the Russian Academy of Sciences, and many hitech companies in ICT, biotech, new materials, and other industries, and many other institutions.

**Where are they based:** Novosibirsk, Russia

**How is this organisation ecosystemic?:** It weaves connections within a local ecosystem, brokering relationships between education, research, innovation, and culture at the local level. As an operator of Novosibirsk Boiling Point coworking space, it also constantly hosts events and activities that connect all parties within the ecosystem together — innovation competitions, learning festivals, meetups and more.

**Contact:** Levan Tatunashvili, <https://academpark.com/about/team/>

### ASCD

**What does your organisation/s do:** ASCD empowers educators to achieve excellence in learning, teaching, and leading so that every child is healthy, safe, engaged, supported, and challenged.

**Where are they based:** USA

**How is this organisation ecosystemic?:** Take a multilayered, multi-stakeholder approach to impact having created oppor-

tunities to work through books, webinars, conferences, consulting services, online learning, video, community, teacher leadership and advocacy. ASCD is dedicated to creating meaningful partnerships with organizations that support our core mission in championing educators who support the whole child.

**Contact:** Sean Slade: <http://www.ascd.org/Default.aspx>,

### Ashoka — Changemaker Education & Social Innovation Communications

**What does your organisation/s do:**

Ashoka is the world's oldest and largest network of social entrepreneurs — a peer community of visionary Ashoka Fellows 3,500 strong worldwide and growing — whose system-changing innovations solve deep-rooted social problems. Ashoka learns from the patterns in their innovations, and mobilizes a global community to build a world where everyone is a changemaker.

**Where are they based:** HQ is in Arlington, Virginia USA but we have offices & programs in over 90 countries around the world.

**How is this organisation ecosystemic?:**

Ashoka takes a systems approach to change and collaborates with innovators across the social innovation and education ecosystem to transform people, ideas, institutions, culture and policy. We partner with a network of organizations to help shift mindsets and reshape how we learn, work, and live together (including schools, universities, corporations, citizen sector organizations, media, and other influencers).

**Contact:** Laura Hay: [lhay@ashoka.org](mailto:lhay@ashoka.org) / [partner@ashoka.org](mailto:partner@ashoka.org)

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Ashoka USA: <https://ashoka-usa.org/> / Twitter:

@AshokaUS / Facebook: @AshokaUSA

## **Autens; Global Schools Alliance**

### **What does your organisation/s do:**

Autens specialises in 3rd Millennium learning, schools and learning spaces. We work collaboratively on visionary projects transforming or rebuilding schools to embrace and support all kinds of children growing up in the global world of today.

The Global Schools' Alliance was formed in 2012 by progressive schools worldwide because they realized that while the world is rapidly changing, education and schools are not. The GSA wants to change that. Member schools are amongst the highest rated schools in their respective countries — ranging from preschools to high schools — and have agreed to bring their experience and knowledge to work together to improve the standards of education globally. GSA connects child-focused innovators with like-minded educational institutes around the world by sharing research, support, and peer critiques with the goal of revolutionizing education and institutionalizing child-centered learning.

**Where are they based:** Denmark; International

### **How is this organisation ecosystemic?:**

Autens has a wide network of other consultancies, designers, architects, engineers, teachers etc that we collaborate with, intentionally multistakeholder.

**Contact:** Lene Jensby: [lene@autens.dk](mailto:lene@autens.dk)  
<https://www.globalschoolsalliance.org/> <https://www.autens.dk/english/>

## **Buckminster Fuller Institute**

**What does your organisation/s do:** For 30 years, BFI has served the international network of Fuller-inspired innovators through the maintenance of a comprehensive Information Clearinghouse on R.B Fuller, including a detailed inventory of the practices and principles informing Fuller's approach to design innovation; articles featuring contem-

porary applications of Fuller's approach published in BFI's website, monthly email newsletter, and on-line books; audio and video archives; and Dymaxion Artifacts, BFI's online store featuring educational tools.

**Where are they based:** USA

### **How is this organisation ecosystemic?:**

Our programs combine unique insight into global trends and local needs with a comprehensive approach to design by facilitating convergence across the disciplines of art, science, design and technology, drawing attention to and supporting the best examples of whole-system thinking, and offering resources and educational platforms that inspire the next generation of design + science practitioners.

**Contact:** David McConville & Kurt Przybilla  
<https://www.bfi.org/>

## **CommunityShare**

**What does your organisation/s do:** We engage a network of community individuals and organizations and educators throughout a region to support place-based, real-world learning opportunities in schools and communities.

**Where are they based:** Tucson, Arizona USA and expanding to new regions

**How is this organisation ecosystemic?:** The focus of our work is on building relationships and reweaving social, intellectual, creative and cultural capital across socioeconomic, geographic and institutional lines in a region. Ecosystems are based on relationships.

**Contact:** Joshua Schachter: [team@communityshare.us](mailto:team@communityshare.us), [www.communityshare.us](http://www.communityshare.us)

## Culture Design Labs

### What does your organisation/s do:

Culture Design Labs work is a dedicated effort is made to (1) identify a systemic social challenge of great urgency and importance; (2) bring together the requisite knowledge from many different fields; (3) design of group collaboration processes to apply this knowledge to the problem that has been identified; and (4) setting up appropriate systems for monitoring and analysis to inform, shape, and guide the change effort.

**Where are they based:** Rancho Margot, Costa Rica

### How is this organisation ecosystemic?:

Culture Design Labs focuses on pathways to transit through the planetary environmental crisis, by working with bioregions that become hosts of learning and cultural innovation ecosystems. The lab creates bioregion based prototypes, one of which is Regenerative Costa Rica Hub.

**Contact:** Joe Brewer, [https://www.patreon.com/joe\\_brewer](https://www.patreon.com/joe_brewer)

## Dream a Dream; Partners for Youth Empowerment

### What does your organisation/s do:

Dream a Dream is a registered, charitable trust empowering children and young people from vulnerable backgrounds to overcome adversity and flourish in the 21st century using a creative life skills approach. Currently, they work with 10,000 young people a year through two innovation labs — After School Life Skills Programme and Career Connect Programme; have trained over 7700 teachers/educators from 206 partners impacting over 192,500 children and young people and have impacted over 1 Mn children through the Happiness Curriculum in partnership with the Delhi Government. Dream a Dream is building a movement to transform and repurpose education that will help each child learn to Thrive.

Partners for Youth Empowerment is a global organization dedicated to unleashing the creative power of youth and adults. We provide training and support for organizations and individuals who work with youth—educators, youth workers, social service professionals, and mentors. Using our proven Creative Empowerment Model, adults learn to lead transformative programs that empower youth with critical life skills. We are a Washington State-based non-profit and we have charity status in the UK.

### Where are they based:

Dream a Dream — Bangalore, India

Partners for Youth Empowerment — Seattle, USA

### How is this organisation ecosystemic?:

Dream a Dream is building a movement to equip millions of young people from vulnerable backgrounds with Life Skills to overcome adversity and thrive in the 21st century. Dream a Dream has a 3-pronged strategy, to empower young people with critical life skills.

**1)** Two direct intervention programmes run as innovation labs: The After School Life Skills Programme (ASLSP) and the Career Connect Programme (CCP). The ASLSP engages over 5,000 students each year in schools across Bangalore where facilitators host weekly after-school sessions developing life skills using sports and arts. Though the young people learn football and creative arts, facilitators utilize these mediums to develop life skills. Sessions focus on teamwork, managing emotions, problem solving, overcoming difficulties, and leadership, among other skills.

**2)** Dream a Dream has codified the Life Skills Approach and replicated it through the Teacher Development Programme (TDP), which is specifically aimed at enabling educators to empower young people with life skills. The strategy is to transform the environment around the child, with the teacher being the key influencer. When a teacher, a key influencer in the young person's life, plays the role of a caring and compassionate adult, children engage actively

in learning, they feel inspired, and they transform.

**3) Transforming the ecosystem by investing in** a) Evidence building through research, b) Building a collaborative impact network to create an urgent, larger and louder voice pushing for 'Re-imagining Education' and c) Transforming government systems. a) Our research publications can be accessed on our website which include an academic paper on the Life Skills Assessment Scale, Mapping Life Skills in India Report, A white paper for OECD (Unpublished), Project Thrive and further research underway in 2019. b) We are creating a collaborative impact network and building urgency by hosting an annual conference, called Change the Script (CTS) for the past five years. In this conference we bring together diverse stakeholders, gain a deeper understanding of the adversity, and explore a range of solutions and approaches by global organizations. The conference is a great platform for learning, sharing and understanding. c) Partnership with Delhi Government to introduce the Happiness Curriculum in 1,024 Delhi Government Schools, impacting over 1 million students. Dream a Dream is the primary anchor organization in the design, coordination, training and implementation of the curriculum.

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[www.dreamadream.org](http://www.dreamadream.org)

## **Educatiooon 3000**

### **What does your organisation/s do:**

We are co-creating a Comprehensive Multi-cultural Education that promotes Culture of Peace and Solidarity, it is time to transform Education worldwide. We form an organic grassroots team of enthusiastic individuals and non-profit organizations, we are a group of volunteers, mainly teachers, parents, youth,

health and education professionals, from more than 50 countries, We invite everybody to be part of this extraordinary journey, generating inner and outer changes, elevating our consciousness and manifesting transformation in Education.

**Where are they based:** Andorra, Argentina, Australia, Austria, Bolivia, Belgium, Brazil, Bulgaria, Canada, Colombia, Croatia, Cuba, China, Chile, Dominican Republic, Ecuador, Egypt, Germany, Ghana, Guatemala, Greece, France, Finland, India, Italy, Israel, Japan, Jordan, Kenya, Lebanon, Morocco, Mexico, Nepal, New Zealand, Paraguay, Peru, Portugal, Romania, Russia, Syria, Sweden, Switzerland, South Africa, Spain, Taiwan, Turkey, Venezuela, the United Arab Emirates (Dubai and Abu Dhabi), the United Kingdom, the United States and Uruguay.

### **How is this organisation ecosystemic?:**

Educatiooon 3000 unites and empowers educators from South America, Middle East, Asia, and the rest of the world to embrace holistic learning and work ecosystemically. In particular, its work in Bolivia and Latin America connects new pedagogies, new curriculum, and new architecture to establish networks of learners and teachers for the 21st century learning.

**Contact:** Noemi Paymal: [noemi.paymal.foundation@gmail.com](mailto:noemi.paymal.foundation@gmail.com), <https://www.educatiooon3000.info/>

<https://www.educatiooon3000.info/>

## **Enrol Yourself**

### **What does your organisation/s do:**

Enrol Yourself equips 21st Century adults to grow themselves, together. We reimagine lifelong learning through the Learning Marathon, our 6 month peer-led learning accelerator. We train local hosts who initiate and facilitate the Learning Marathon where they are. We also partner with organisations to deliver learning experiences and tackle learning and development challenges.

**Where are they based:** Our HQ is in London, but we've launched the Learning Marathon in Birmingham and Bristol. Edinburgh and Sofia are next.

### **How is this organization ecosystemic:**

We operate in a decentralised way, training our

hosts in our method, giving them access to our toolkit and resources, then supporting them to take the responsibility and autonomy to start things up in their local area. Peer-led learning relies on ecosystemic principles because there is no one teacher that provides information and participants have to learn to navigate the resources of the peer group. We have also started to partner with other organisations to use our experience and resources to underpin learning experiences that they wish to initiate or host. We wish to empower facilitators, coaches, educators and people organizers to be able to host learning journeys where they are. In other words we want to give life to a 'grow your own' lifelong learning system where power is far more distributed and the system as a whole is therefore far more responsive and emergent. In this way we might have a system better suited to the rapid changes that are being brought and will continue to be brought this century.

**Contact:** Zahra Davidson [www.enrolyourself.com](http://www.enrolyourself.com) / twitter: @EnrolYourself / insta: @enrol\_yourself

## **EVOLving Leadership; World Academy of Arts and Science**

**What does your organisation/s do:** EVOLving Leadership maximizes the potential of individuals, businesses and communities for superior performance and return on conscious contribution (ROC). We are ushering a new era of business and social leadership. Developing an understanding of global social evolution and the various forms of leadership needed to accelerate progress in all fields of society. Currently developing and modelling Global Leadership in the 21st Century in collaboration with UN Office in Geneva.

**Where are they based:** USA/Globally

**How is this organisation ecosystemic?:** EVOLving Leadership embraces ecosystemic philosophy of empowered learning and works to create holistic learning experiences for

leaders of all types.

**Contact:** Mila Popovich <https://milapopovich.com/>

## **Fair Education Alliance; International Cultural Youth Exchange**

**What does your organisation/s do:** The Fair Education Alliance is a coalition of over 100 organisations working together to drive lasting change at a local and national level. We monitor the gap between the most disadvantaged children and their wealthier peers, and use our collective voice and resources to end educational inequality. Our vision is of an education system where no child's educational success is limited by their socio-economic background. This is a world where disadvantage no longer determines literacy and numeracy rates at primary school, GCSE attainment at secondary school, the emotional wellbeing and resilience of young people, participation in further education, or university graduation.

Inter-Cultural Youth Exchange (ICYE UK) is an international volunteering charity working in the field of intercultural learning and youth development. Established in 1993, we work with a network of local partners to organize overseas NGO placements throughout Latin America, Africa, Asia and Europe. We also arrange provide placements in the UK for international volunteers to support local charities here, meaning ours is a truly unique cultural exchange!

**Where are they based:** UK

**How is this organization ecosystemic:**

The reasons for this educational inequality are not simple, and lie in an intricate web of social issues. Addressing such complex problems will take more than one institution, one organisation, or even one government. We believe that by working together, learning from each other, sharing evidence and amplifying our efforts through our networks we can drive change more quickly. We have built a multistakeholder alliance, made up of



businesses, charities, and educational bodies from across the country, each of whom has signed up to work towards achieving the five Fair Education Impact Goals, which follow the educational journey of a child from primary school through to higher education and employment. We work together to tackle educational inequality at a local and national level. We monitor the gap between the most disadvantaged children and their wealthier peers, and use our collective voice and resources to end educational inequality

**Contact:** Executive Director, Gina Cicerone and CEO, Sam Butters [gcicerone@faireducation.org.uk](mailto:gcicerone@faireducation.org.uk), <https://www.faireducation.org.uk/>

### Forum for the Future

**What does your organisation/s do:**

Forum for the Future takes a systems approach to complex sustainability challenges. We do this by convening transformational collaborations to drive change, by partnering with organisations to help them lead by example, and by building a global community of pioneers and change makers.

**Where are they based:** London, UK

**How is this organization ecosystemic:**

Forum specialises in taking a systems approach, understanding that the challenges we are facing are complex, interconnected and constantly changing. This means we help individuals and organisations understand their role in creating change in the systems they operate within, and seek to build collaboration between different actors in any system, working off the assumption that no single organisation has a monopoly on the truth and it is therefore critical to understand different perspectives to work together towards change.

**Contact:** [@Forum4theFuture](https://www.forumforthefuture.org)

### Fundació Jaume Bofill

**What does your organisation/s do:**

A funding think & do tank focused on educational next challenges. We develop research, programs and coalitions to achieve best educational policies and practices to reach equity & quality education for all. We are based in Barcelona and focused in our country but working in partnerships and networks worldwide. For 20 years, I have been creating, managing, assessing and leading community-based innovative social programs for children & families rights: school achievement, community inclusion, training and work inclusion, migrant people. Board member in several foundations related to third-sector research and social inclusion networks.

**Where are they based:** Catalonia, Spain

**How is this organization ecosystemic:**

Our foundation used to be a social and community funder and at the same time a strong research and policy-advice think tank in many social and educational issues in our country. We develop policy advice, research, programs and multistakeholder coalitions to improve educational policies and practices that overcome inequalities. We have realized that inspiring new horizons, research and policy advice doesn't drive innovation by itself. In recent years, we have been moving our approach from education reform to ecosystem innovation, more committed with change and focused on a few big challenges. We have moved towards innovation, system transformation and focusing on a few short-term (3-5 years) and mid-long term educational challenges to make a bolder impact. We ask ourselves about how could we catalyze and support an innovation ecosystem in our country. We are now working in this new strategy: connecting leaders, change-makers and innovators, identifying and scaling programs, creating alliances and platforms to build and catalyze ecosystems and spread and share innovation, empower the emerging generation of activists, leaders

and changemakers with skills and tools, driving advocacy campaigns that engage activists with new challenges.

**Contact:** Ismael Palacín, <https://www.fbofill.cat/> @ismaelpalacin

## **Fundación Mi Sangre**

### **What does your organisation/s do:**

Fundación Mi Sangre's purpose is to activate ecosystems and develop capacities in order to allow new generations to be protagonists in the creation of a culture of peace in Colombia.

**Where are they based:** Medellín, Colombia.

### **How is this organization ecosystemic:**

FMS's work is based on a systemic approach at multiple levels (see picture attached): At the first level, We aim to foster individual changes working with children and youth at risk, with the participation of principals, teachers and families. This is typically done in school settings (formal education systems). At the second level, we aim to bring about community changes with youth at risk, this is done by developing their life skills and sparking in them the interest to be community leaders and build peace in their territories. At the third level, we search for changes in society, with young people who are leading peacebuilding initiatives to mobilize others and influence the public agenda, and we connect them with other youth leaders who are mobilizing and impacting their communities through the REDAcción de Paz, a national network of young peacebuilders. Lastly, at the fourth level, we aim to bring about changes systemic changes by aligning and fostering collaborations with other public and private agents (NGOS, local government, private companies, academia, community based organizations, media, and other partners who in one way or another influence the experience of young people. It is important to mention that although we

have specific projects in this level such as the Medellín social , this also runs through all the other levels of intervention, as we continuously connect children and youth with relevant actors in their ecosystems.

**Contact:** Catalina Cockduque: [ccock@fundacionmisangre.org](mailto:ccock@fundacionmisangre.org) [www.misangre.org](http://www.misangre.org)  
instagram: @fmisangre facebook/misangre-fundacion twitter/fmisangre—

## **Fundacion TAAP, Aid Live Foundation, Ashoka**

### **What does your organisation/s do:**

Fundacion TAAP uses the arts, educational innovation and learning through games to promote more peaceful environments for families, schools and communities in Latin America and the world, such as Chile, Mexico, Uruguay, the United States, United Kingdom, France and Qatar.

Aid Live is an organization formed by a group of social development specialists with more than 10 years of experience working with communities in Venezuela and Colombia, who will be responsible for ensuring the proper use of resources and the impact of projects such as Venezuela Live Aid.

**Where are they based:** Colombia

### **How is this organisation ecosystemic?:**

We connect and stimulate a range of stakeholders, children, parents and the wider community to change how they think about violence and come up with communal solutions to eradicate it. The approach is transdisciplinary, rooted in neuroscience, art, pedagogy, development communication and learning through play and art and personal development is just as important as the community response to local and global needs. TAAP also delivers training programmes to governments, companies and NGOs. These are designed to help these actors promote the use of creative problem-solving, empathy and localised strategies to reduce violence in their communities. We actively promote learning ecosystems

through training of social leaders, development and management of public and private projects, formulation of public policies and co-creation of projects with international networks of social and educational.

**Contact:** Gaby Arenas de Meneses, <https://venezuelaaidlive.com/>, <https://fundaciontaap.com/en/home/>

## ImagiNation Afrika

### **What does your organisation/s do:**

Works for the development of the whole child by creating child-centered public spaces, partnering with institutions that nourish child development and by accompanying parents and communities, ultimately building an ecosystem that allows children to thrive and lead in the 21st century.

**Where are they based:** Senegal, Africa

### **How is this organisation ecosystemic?:**

We work across different actors in the ecosystem surrounding children in particular: journalists, educational institutions, health workers, parents and municipal government to weave a better ecosystem for children 0-5.

**Contact:** Karima Grant: [imaginationafrika.org](http://imaginationafrika.org), [karima@imaginationafrika.org](mailto:karima@imaginationafrika.org),

## Innovation Unit

### **What does your organisation/s do:**

Innovation Unit is a social enterprise based in the UK, Australia and New Zealand. We work internationally, applying disciplined approaches to develop new solutions and create impact at scale. We are outcomes and impact focused. We work with our partners and clients to deliver tangible and measurable changes they, and we, want to see in the world. Through our projects and ventures we identify, create and scale evidence-based solutions, mainly focused on: children's social care, learning & schools, healthy lives, early

years and mental health.

**Where are they based:** UK, Australia, New Zealand

**How is this organisation ecosystemic?:** Supporting evolution of the learning ecosystem through original research and program development.

**Contact:** Valerie Hannon <https://www.innovationunit.org/>

## KnowledgeWorks

### **What does your organisation/s do:**

KnowledgeWorks helps co-create the future of learning alongside education stakeholders by exploring the future of learning; growing educator impact by helping schools and school districts transition to personalized, competency-based learning; partnering with state and federal policymakers to align policy in support of that approach to learning; and creating an evidence-base for student-centered learning.

Where are they based: Cincinnati, Ohio, USA

### **How is this organisation ecosystemic?:**

Through its strategic foresight work, KnowledgeWorks has since 2009 explored possibilities for education systems to transition toward vibrant learning ecosystems that enable all learners to thrive. Through its integrated body of work, KnowledgeWorks aims to catalyze sustainable, systemic change in 7 states, transforming learning environments and outcomes for one million students by 2025.

**Contact:** Katherine Price: [knowledge-works.org](http://knowledge-works.org), [princek@knowledgeworks.org](mailto:princek@knowledgeworks.org), @katprince, @knowledgeworks, <https://www.linkedin.com/in/katherineprince/>, <https://www.linkedin.com/company/knowledgeworks-/>, <https://www.facebook.com/KnowledgeWorks.org/>

## LearnLife

### What does your organisation/s do:

Learnlife are building an open ecosystem for a new lifelong learning paradigm alongside existing education systems. Research was undertaken that looked at many highly regarded 'best practice' examples of innovative schools from around the world. In collaboration with thought leaders for learning, we are developing new learning elements, learning spaces and learning technologies that are responsive to the inspirations, needs, and challenges of today's children and future generations to come.

**Where are they based:** Barcelona, Spain, expanding to Germany and Africa

### How is this organisation ecosystemic?:

We are building an open ecosystem for a new lifelong learning paradigm alongside existing education systems. Research was undertaken that looked at many highly regarded 'best practice' examples of innovative schools from around the world. In collaboration with thought leaders for learning, we are developing new learning elements, learning spaces and learning technologies that are responsive to the inspirations, needs, and challenges of today's children and future generations to come.

**Contact:** Stephen Harris, <http://stephen-harris.me/> <https://learnlife.com/> @stephen\_h @wearelearnlife

## LenPoligrafMash

### What does your organisation/s do:

LenPoligrafMash's focus is on young people interested in technology and entrepreneurship, and aims to create first-hand experiences for school children, university students, and young adults that will allow them to take action and create technologies based on real world challenges. They collaborate with extra curricular education providers and universities who use the co-working space for government endorsed STEM competitions and hackathons that tackle real-world challenges. Events like

this provide students with the opportunity to collaborate with one another on a shared ground.

**Where are they based:** St.Petersburg, Russia

### How is this organisation ecosystemic?:

LenPoligrafMash (LPM) is mostly used as a whole-system prototype to connect innovators in engineering, academia, and businesses, including incubators. The long term goal is to create an ecosystem that transforms and raises interested students who have used the space into entrepreneurial experts and teams who create educational projects for aspiring STEM students.

**Contact:** Kirill Soloveychik

## Lego Foundation

### What does your organisation/s do:

The LEGO Foundation aims to build a future in which learning through play empowers children to become creative, engaged, lifelong learners.

**Where are they based:** Denmark

### How is this organisation ecosystemic?:

The LEGO Foundation aims to build a future in which learning through play empowers children to become creative, engaged, lifelong learners. They support programs and create original research which enables the development of learning ecosystems.

**Contact:** Halima Begum <https://www.legofoundation.com/en/>

## Metta-Learning project of Vivir Agradecidos; Laszlo Institute for New Paradigm Research; EARTHwise Centre; University of the Planet/Global Education Futures

### What does your organisation/s do:

1. Design and implementation of an Evolutionary Learning Ecosystem as part of the Metta-Learning project of Vivir Agradecido based in Argentina. 2. Creation of a praxis

framework on New Education Paradigms as part of R&D+i work at the Laszlo Institute for New Paradigm Research based in Italy. 3. Design and delivery of Thrivability Education programmatic offerings as part of the EARTHwise Centre based in Mauritius. 4. Design of the University for the Planet (U4P) as part of the Global Education Futures (GEF) initiative based in Russia.

**Where are they based:** see above.

**How is this organisation ecosystemic?:**

Focusing on the Metta-Learning project, we seek to cultivate wellbeing in educational institutions through the application of new knowledge (mainly from the neurosciences) and the rediscovery of timeless wisdoms for how these institutions of learning function in relation to themselves and others. By working in them and together with them, we promote the development of higher human capacities that lead their members to live in greater harmony and balance. We do this through an interactive process that cultivates wellbeing in educational institutions. Our work helps the adults in them to unfold their highest human capacities (such as presence, compassion, perspective, gratitude and trust in life). We accomplish this task by offering content in partnership with other members of the Learning Ecosystem, and by developing institutional processes that promote a culture that supports human dignity entitlement in schools.

**Contact:** Alexander Laszlo <https://ecosistema.metta-aprendizaje.com/>; <https://www.laszloinstitute.com/>; <https://www.earthwisecentre.org/>; [info@mettaaprendizaje.com](mailto:info@mettaaprendizaje.com)

## Metaversity

**What does your organisation/s do:**

Metaversity is both a specific organization and a principle of organization. For the organization to be an ecosystemic “metaversity”, three principles are used to implement in its work: micro-competency-based approach, holistic development,

systems thinking and systems education. To enable this we conduct educational events and courses, create and conduct games - <http://edupr.ru/igry>, train teachers in holistic development <http://edupr.ru/ped> and support the activities of the community — the educational ecosystem, for this we carry out Warehouses of Uma [http://edupr.ru/sklad\\_uma](http://edupr.ru/sklad_uma), cooperate with business, universities, NGOs and participate in international cooperation. We also have a short online ‘navigator’ course to help people identify their learning needs and what they need to get there.

**Where are they based:** St Petersburg, Russia

**How is this organisation ecosystemic?:**

The fields of activity work at three levels: communities, a pedagogical base of education for all and educational ecosystems. Metaversity is a complex combination of various educational projects, individuals, organizations with an educational component, which generally give a systemic effect on education, while not being something created by a directive.

**Contact:** Oleg Muromtsev & Alena Surikova, <http://ishipo.ru/main>

## New Model in Technology and Engineering

**What does your organisation/s do:**

NMiTE — New Model in Technology and Engineering — is an initiative backed by government, educators, and industry, to transform engineering education in Britain. Located in Hereford, NMiTE aims to secure university status and become Britain’s first wholly new, purpose built UK university in 40 years. The NMiTE project is crucial to Britain’s future. Engineers are key to mastering major world challenges — from sustainable food production to cybersecurity to Artificial Intelligence and more — but the UK is critically short of them.

**Where are they based:** Herefordshire, UK

**How is this organisation ecosystemic?:**

Talking a multistakeholder approach to developing technology and engineering linked to real-world transdisciplinary challenges.

**Contact:** Michael Stevenson, <https://nmite.ac.uk/>

## OpEPA

### **What does your organisation/s do:**

OpEPA works in three main areas (education, communication for regeneration and public policy advocacy) that seek to contribute to the construction of a society connected to the Earth, which can access and appropriate use of knowledge, tools and actions that reduce human impact on the planet and forge a regenerative and participatory model of daily action.

**Where are they based:** Colombia

### **How is this organisation ecosystemic?:**

OpEPA's approach to nature-based education follows regenerative and life system principles weaving non-conventional actors and learning environments into learning experiences that foster ecosystemic and regenerative mindsets based on interdependence and Interrelations (within living systems) and the re-establishment of healthy relations with one self, others and nature.

**Contact:** Luis Camargo <https://opepa.org/>, [luis@opepa.org](mailto:luis@opepa.org), [@opepa](https://twitter.com/opepa)

## **PEDAL (Centre for Research on Play in Education, Development & Learning)/University of Wollongong**

**What does your organisation/s do:** Our mission is to conduct academic research into the role of play in young children's lives and to inform wider practice and policy. PEDAL is located in the University of Cambridge's Faculty of Education, and was launched in October 2015 with funding from the LEGO Foundation. PEDAL is part of the Psychology, Education and Learning Studies Research Group at the Faculty.

**Where are they based:** UK/Australia

### **How is this organisation ecosystemic?:**

Creating and supporting research in the development of the learning ecosystem.

**Contact:** Natalie Day: [natalieday4@gmail.com](mailto:natalieday4@gmail.com), <https://www.educ.cam.ac.uk/centres/pedal/>, <https://www.uow.edu.au/>

## **Play Verto and Bite the Ballot**

### **What does your organisation/s do:**

Play Verto is a holistic approach to data led decision making. Using play as a catalyst for community engagement we are able to collate rich insights on what the community think and feel related to key issues. The crucial element is the data — we ensure it goes back into the hands of the community so they can become active and engaged at a grassroots level but we share the data with decision makers to drive the conversation and add pressure to key outcomes needed systemic change.

**Where are they based:** UK and Portugal

### **How is this organisation ecosystemic?:**

Play is a great way to bridge gaps in traditional hierarchies and data is incredibly difficult to ignore if all voices are activated to participate. Identifying key issues and solutions from wider society and supporting them to build capacity and drive local change is one key factor. The other is ensuring data is flowing through the key design makers and institutions so that they act on taking root causes to issues highlighted by the community. I do this in a variety of ways — both social entrepreneurial and intrapreneurial — Weaving key elements of the specific ecosystem to ensure greater accountability, more diverse engagement and collective decision making.

**Contact:** Michael Sani, [@michaelsani](https://twitter.com/michaelsani) [www.playverto.com](http://www.playverto.com)

## Redes De Tutoria

### What does your organisation/s do:

Over the past 20 years, Redes de Tutoría has sought to transform students and teachers by developing tutorial relationships and harnessing the power of one to one dialogue. The Redes de Tutoría approach moves away from the traditional classroom where a teacher delivers standard content for all students to work through at exactly the same pace. They intentionally involve multiple stakeholders in the community-centric process, such as the government, teacher, student, parent levels to ensure this benefits all.

**Where are they based:** Mexico, Singapore, USA, Thailand

### How is this organisation ecosystemic?:

The process can and only does proceed by the inner thrust of empowered teachers and students –their parents included—and, in parallel, by the good judgment and perceived benefit of enlightened politicians and administrators.

**Contact:** Gabriel Camara: [gcamara45@gmail.com](mailto:gcamara45@gmail.com), <https://redesdetutoria.com/>, [contacto@redesdetutoria.com](mailto:contacto@redesdetutoria.com)

## Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA)

### What does your organisation/s do:

Think tank and social change organisation

**Where are they based:** UK, USA

### How is this organisation ecosystemic?:

Using research and insights to develop and implement new ideas, around a model of change called ‘think like a system, act like an entrepreneur’. Cities of Learning is the first whole place, whole system (ecosystem) programme.

**Contact:** Rosie Clayton [@RosieClayton](https://twitter.com/RosieClayton) [www.thersa.org](http://www.thersa.org)

## Social Innovation Institute

**What does your organisation/s do:** The Social Innovation Institute support’s practitioners and community changemakers to address the root causes of systems-level problems by developing new skills and ideas, making stronger connections, exploring and creating learning and impact pathways. Building on core competencies central to doing this work, we focus on culture building, understanding systems, collaboration and storytelling for people and planet.

**Where are they based:** Canada

### How is this organisation ecosystemic?:

One of our premier initiatives is the collaborative national development of Social Innovation Canada, an ecosystem of social innovation and systems change practitioners organized regionally who share the common purpose of advancing learning and impact in their communities, regions, and across the country. The primary function of the ecosystem is to support practitioners to wayfind, build capacity, and align for action.

**Contact:** Joshua Cubista, Dean  
[joshua@socialinnovation.ca](mailto:joshua@socialinnovation.ca)  
<https://socialinnovationinstitute.org/>

## Universidad del Medio Ambiente (UMA -University of the Environment)

### What does your organisation/s do:

UMA was founded in 2009 in Valle de Bravo, Mexico, as the first university campus in Latin America specializing in socioenvironmental studies in diverse disciplines and offering a project-based education specially designed for collective-change agents. Our purpose is to form learning communities able to foster personal and socioenvironmental regeneration through codesigned projects that focus on bringing forth potential.

UMA currently offers seven master degrees (sustainable architecture, green MBA, environmental law, sustainable tourism, agroecology, socioenvironmental projects and education for sustainability) and is developing bachelor and doctorate degrees. Our programs have an interdisciplinary, systemic and pragmatic vision based

on a biocultural ethic. We explore autonomous learning processes based on experiences, outdoor exploration, collective intelligence, personal development, action research and critical scientific thinking.

**Where are they based:** Mexico

**How is this organisation ecosystemic?:**

UMA is a diverse community of Spanish-speaking collective-change agents from Mexico and Latin America that are interested in bringing forth socioenvironmental regeneration and that come from an array of professions, ages, cultures, ideologies, and socioeconomic conditions. UMA endeavors to set conducive conditions for students to form learning communities that bridge diversity towards a common purpose. This is explored both at the level of the university as a learning community for sustainability, as well as in the project process followed by students, where diverse key stakeholders are brought together in a systemic codesign context.

**Contact:** Victoria Haro [vhs@umamexico.com.mx](mailto:vhs@umamexico.com.mx), <https://umamexico.com/> @umamexico

## Unearthed

**What does your organisation/s do:**

Unearthed focuses on ecosystemic Coaching, Facilitation and workshop design

**Where are they based:** USA

**How is this organisation ecosystemic?:**

We work with organizations and institutions that are trying to build global communities and to do so we follow ecosystemic principles

**Contact:** Romina Faulb (previously Ashoka) [rominafaulb@gmail.com](mailto:rominafaulb@gmail.com); <https://www.unearthedllc.com/>

## WISE

**What does your organisation/s do:**

WISE is an international, multi-sectoral platform for creative thinking, debate and purposeful action. WISE has established itself as a global reference in new approaches to education. Through both, the biennial Summit

and a range of ongoing programs WISE is promoting innovation and building the future of education through collaboration.

**Where are they based:** Doha, Qatar

**How is this organisation ecosystemic?:**

We take a multistakeholder approach by bringing in conversation to many different sectors and have 100+ nationalities present at the WISE event. We also create intentional learning loops between programs, research, and advocacy.

**Contact:** Zineb Mouhyi <https://www.wise-qatar.org/> twitter: @wise\_tweets  
instagram: @wiseqatar

## World Academy of Arts and Science, (+ many more here)

**What does your organisation/s do:** The

World Academy of Art and Science (WAAS) is an international non-governmental scientific organization, a world network of individual fellows elected for distinguished accomplishments in the fields of natural and social sciences, arts and humanities. The Academy strives to promote the growth of knowledge, enhance public awareness of the social consequences and policy implications of that growth, and provide leadership in thought that leads to action.

**Where are they based:** International

**How is this organisation ecosystemic?:**

The Academy serves as a forum for reflective scientists, artists, and scholars dedicated to addressing the pressing challenges confronting humanity today independent of political boundaries or limits, whether spiritual or physical — a forum where these problems can be discussed objectively, scientifically, globally, and free from vested interests or regional attachments to arrive at solutions that affirm universal human rights and serve the common good of all humanity. WAAS is founded on faith in the power of original and creative ideas — Real Ideas with effective power — to change the world.

**Contact:** Garry Jacobs, <http://www.worldacademy.org/>



# Appendix 2.

## Tools

### 2.1 PPP Mapping

This learning ecosystem mapping tool is for anyone who wants to understand, explore and visualize their learning ecosystem. It's an exercise to support you in mapping your current personal learning practices, how you learn within and from place, as well as how you are learning to support current planetary needs and crisis. This process helps you to identify your current state as a learning being in this universe and the interconnection between the personal, place and planetary levels and can be applied to an individual, team or organization.

#### What is a learning ecosystem map?

A learning ecosystem map illustrates the different approaches and current practices of learning in your learning ecosystem, as well as how these different practices inform each other. It consists of all the elements of your learning experiences, and how you serve yourself, other people, communities and the planet by doing so.

Your learning experiences are made up of aspects such as: self taught knowledge based approaches (e.g. reading/online courses), social learning (e.g. feedback at work, from friends, through community, coaching, mentorship), project-based (e.g. work or personal related, such as research, crafting, building a bike etc.), classes, events and workshops (e.g. dance, language), artistic, wellbeing and spiritual practices (e.g. journaling, meditation, prayer, poetry).

#### A learning ecosystem map can be used to:

- > Collaborate directly with other stakeholders for your own personal, organizational, community or planetary change
- > Explore new approaches or sources of learning to improve personal, organizational, community or planetary based needs
- > Identify where changes are needed, and what effects they might have

#### Why use this tool?

Creating a learning ecosystem map helps you to understand how learning serves yourself, your local place and the wider planet. It also helps you identify the ways you learn, the types of approaches you take and the interconnection and relationships between them.

You can use your map as a practical tool to visualise your learning ecosystem to explore new possibilities, make sense of what you currently like to learn or focus on learning and why, as well as show emerging ways you could increase or share the value of particular aspects of your learning ecosystem.

The mapping process prompts you to consider different ways of learning, relationships, areas of interest and ideas in your learning ecosystem, and can generate useful sense-making for ranging from your own personal care to learning differently at work or with peers, as well as how you can support your own understanding of our wider planetary needs.

## How to use this tool

### Materials

You will need a large sheet of paper (ideally A1 size) or a whiteboard. Use sticky notes and coloured pencils or pens.

### Method

Using the instructions draw your map onto your paper or whiteboard. You can either work on your own, or in a group with other actors in your learning ecosystem. It may be useful to use a workshop setting with a facilitator.

Dependent on the focus of your learning ecosystem map it may take between 15 minutes and two hours to draft the ecosystem map. If it is a large group across an organization you may need to gather two or three rounds of feedback afterwards to ensure a shared understanding of the learning ecosystem. Once you are happy with your draft map, take a photograph for reference.

### What next?

You can use your learning ecosystem map to communicate your current understanding of how and where you learn to serve and in service with yourself, your place and the planet. Alternatively, at the level of your organization, your place, and the planet.

You could repeat the experiment, especially as the personal level, on a monthly basis to explore how paying attention to your learning ecosystem can help you understand how you learn and what you might want to learn next, as well as connecting with your community.

Developing the map will reveal where the different levels of your learning ecosystem could evolve and will help to communicate these opportunities.

You can also photograph your map and share it on social media using #LearningEcosystemMap.

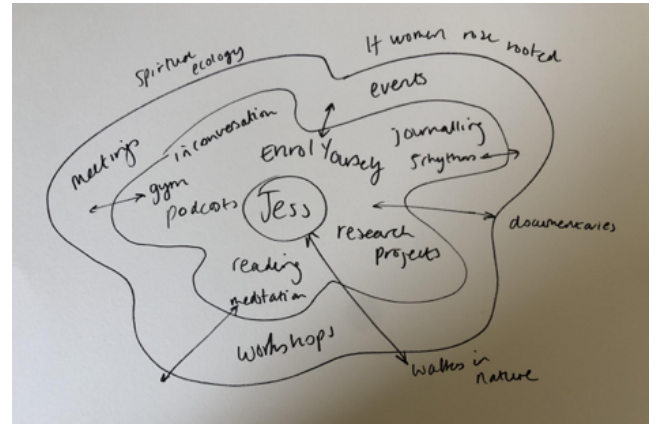
You could also recreate your map using mapping visualisation software, such as Kumu.

Map your personal learning.

Map your place-based learning.

Map your planetary learning.

E.g An individual's learning ecosystem



### An example of an ecosystem mapping.

Before beginning this exercise it is recommended that you spend some time exploring and thinking about the ways you learn before organising into these themes to create a map.

1. Map your personal learning ecosystem (ways you learn to support your thriving)
2. Map your place-based learning ecosystems (ways you learn in your locality for thriving)
3. Map your planetary learning ecosystem (ways you learn to support the planet's thriving).
4. Draw arrows between the relationships where there is clear overlap across the ecosystems to notice the interconnection you have.

An organization's learning ecosystem

## 2.2 CORE Mapping

1. Map your strengths in each section using the Learning Ecosystem poster of the table in section 3.2. Map the strongest around towards the centre of the mid point. You could use one colour of post stick notes to do so.
2. Now map your weaknesses or hindrances in each box, you can map the hindrances around the edge to form a second layer. You could use a second colour of post stick notes to do so.
3. Use this process to identify how you might go about improving each aspect and set intentions of how you might overcome each one. You could then identify if the blockage requires the roles of gardening or weaving leadership to guide your development.

The question to what extent is intended to lead you to reflect on either the success/enabler or current weakness/hindrane each element plays in your ecosystem development.



## Guiding questions for Culture

*Map the words in bold*

To what extent do you have a strong set of **co-created practices** that embody your values & norms through elements such as evolving guiding principles, visions and shared language?

To what extent do you have a have **rituals and rhythms** to develop bonding and trust?

To what extent do you have authentic **multi stakeholder relationships** within and across the community from parents to businesses, governance to nature?

To what extent do you make time and space to **prioritise personal and collective wellbeing**?

Have you cultivate interconnected and inter-dependent **relationships at the in person and technological levels**?

To what extent do you work in an **environment** that enhances culture, paying attention to elements such as space, lighting, sustainability and design?

To what extent does your **space and environment** that deeply consider the intended experience/s and project, paying attention to elements such as design, space, nature, light, sound, smell? This is especially important for non-neurotypicals.

To what extent do you use engaging **story-telling** that collaboratively reshapes narratives around emerging ecosystems and societal change?

## Guiding questions for Organizational Principles

*Map the words in bold*

To what extent are you mindful of localised contexts serving **community, place-based needs**?

To what extent do your governance structures demonstrate **distributed leadership**, modelling values and inviting criticism?

To what extent do you foster personal agency and opportunities for **learning experiences and development**?

To what extent do you catalyze and nourish **emerging ecosystemic dynamics** toward evolution, adaption, resilience, diversity, mutually beneficial relationship and cyclical approaches?

## Guiding questions for Resources

*Map the words in bold*

To what extent do you have **long-term, value based funding** from multiple stakeholders to ensure longevity?

To what extent do you have **inclusive and diverse teams where** possible regarding skills, gender, race, culture etc.?

To what extent do you use **tools and equipment that are sustainable and regenerative, treading as lightly on the earth as possible** in regards to their footprints?

To what extent do you use **technology to increase connection**, not disconnection?

## Guiding questions for Execution

*Map the words in bold*

To what extent do you approach **planning and design based on the emerging principles of learning ecosystems to include mapping** your actual and possible partners with approaches such as constellation mapping and tools such as group map, mural, miro and kumu?

To what extent do you **cultivate the conversation** between leaders in your area, or your sector, on how to become more ecosystemically oriented?

To what extent do you **prototype** your own ecosystem acceleration processes and projects?

To what extent do you foster ecosystemic facilitation through **collective collaboration** through play, trust building exercises, encouraging decision making, open mindedness and innovation?

To what extent do you ensure there are **clear roles** even though they may span different elements?

To what extent do you create **neutral spaces** for multiple stakeholders to evolve together?

To what extent do you incorporate **research and analysis** in the way that best makes sense for your ecosystem project dependent on its stage? This could look like participatory action research or an in-depth 'academic' longitudinal study.

To what extent do you ensure there are **feedback loops on research and processes**, ensure that all feel heard and have the space to safely share their concerns?

To what extent do you **increase visibility and promote the journey of your ecosystem** so others can learn from you, support you and celebrate your successes? This could look like online webinars to workshops to online media.

Photos used in this report are taken by the authors from the <https://unsplash.com/>

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