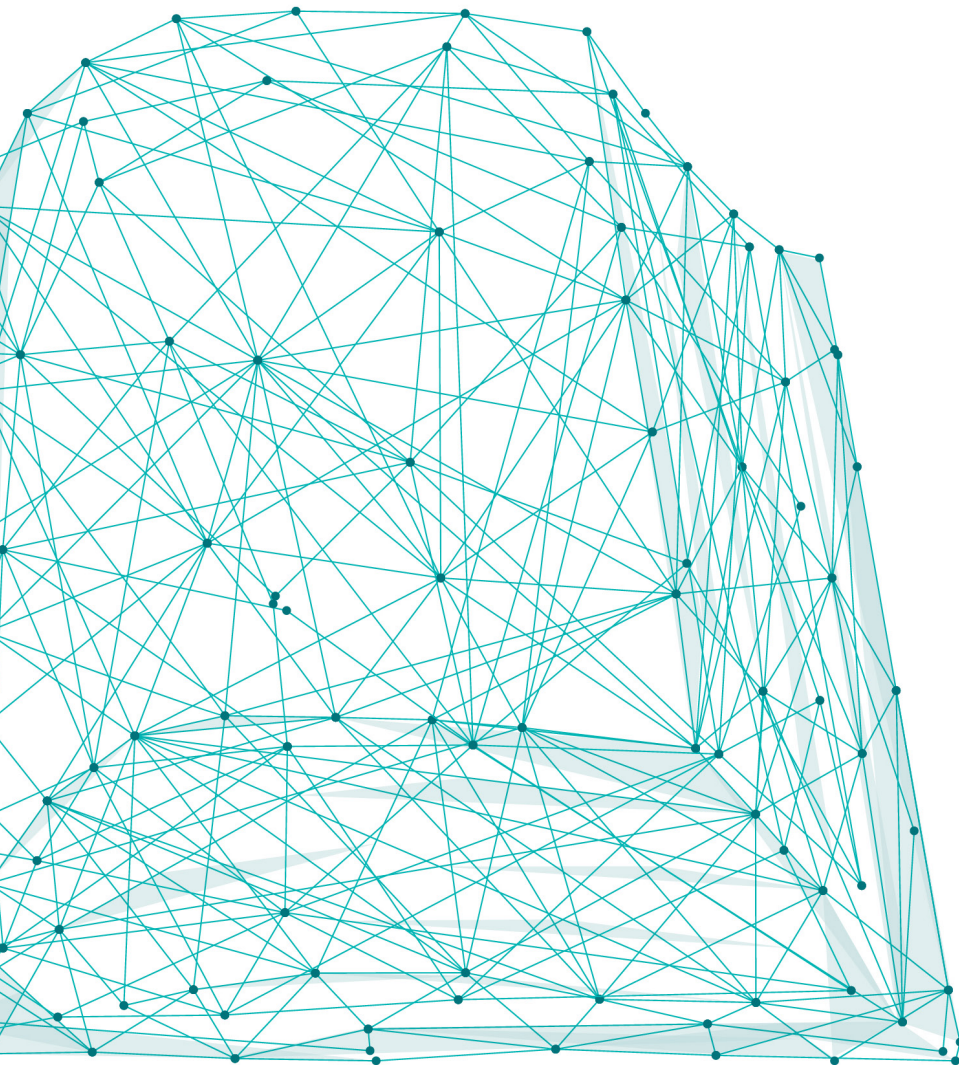


# Local Learning Ecosystems: Emerging Models

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## Foreword

We launch the current series of WISE Reports with an exploration of the education ecosystems idea as a potential game-changer for today's learners.

Fewer young people today experience the empowerment of education through conventional schooling alone. But when they engage with a range of resources within a broader community, charged with the power of social interaction in the connected world, learners of all ages, temperaments, and aptitudes can seize greater opportunities that better meet their needs. As learners around the globe seek both the technical skills of doing and knowing, and the soft skills of management, critical thinking, and many others, the holistic approach suggested by ecosystems challenges conventional education hierarchies and decision making.

In this report, colleagues from Innovation Unit have provided a valuable framing of ecosystem typologies and stages, with a review of the most salient current thinking. The core of the report features nine case study portraits that dramatize a variety of ways education ecosystems are having real impact. The authors pose key questions of each of the initiatives, seeking to identify both blockages and enablers to creating education ecosystems, as well as, most crucially, asking whether and how they might truly represent new learning paradigms, as suggested by some advocates.

The report, through these case studies, bridges the ecosystem theory versus practice gaps. The initiatives come from around the world, and build a wide range of possible new relationships among business, education, government, and community. They are learner-driven and focused, responding to the learners' need to experience the full complexity of their environments. Importantly, these initiatives embrace innovative credentialing systems that can replace or supplement conventional assessment practices. Such creative disruption holds real potential in transforming how learning happens.

It remains to be seen whether the education ecosystem idea, as expressed in these varieties, will evolve as a truly significant new driver in public education on a large scale. These initiatives reflect ambitious visions well beyond current achievements. Conventional systems, with their excessive assessment routines, pressurized school communities, and entrenched vestigial approaches, are difficult to shift. But this report offers a taste of the creative flourishing in education thinking today that has emerged against, and perhaps in response to, the erosion of resources for public education, often abetted by indifferent, even hostile government.

Eco-systemic approaches ideally reflect and respond to the ambitions and perspectives of observant young people today, vigilant, receptive of learning experiences, and ready to create their own unique paths. Let us hope that professional educators everywhere will also be inspired to continue exploring new resources and ideas, and to seize transformative opportunities as they arise. It would be a great loss to established schooling if teachers ceded their role in leading change –and left the future– to others.

Asmaa Al-Fadala, PhD

Director, Research and Content

World Innovation Summit for Education (WISE)

# Chapter 1

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Executive Summary

Across the globe there is a growing consensus that education demands radical transformation if we want all citizens to become future-ready in the face of a more digitally enabled, uncertain and fast changing world. Education has the potential to be the greatest enabler of preparing everyone, young and old, for the future, yet supporting learning too often remains an issue for schools alone.

As learning frameworks outlining ambitious global agendas for inclusive education and lifelong learning begin to emerge, and as societies become more connected and intertwined, it is becoming clear that society has a collective role to play in equipping people to create meaningful futures, through lifelong learning.

Deriving from the field of evolutionary biology, an 'ecosystem' is a community of interdependent organisms acting in conjunction with the natural environment. Over the last decade, the term has proliferated as a metaphor for thinking differently about the future of education, moving beyond a top-down systems approach. The power of this metaphor has led both to a richness of debate and some confusion about what is meant by the term. We offer a simple typology of ecosystem, to bring clarity to the work and support others navigating this territory:

### 1 - Knowledge sharing ecosystems

This type of ecosystem comprises complex, evolving networks of organizations including think tanks, foundations, governmental and global agencies and others who are consciously connecting to facilitate the sharing of new knowledge about education and learning, innovation, funding opportunities, and more. It is largely concerned with building the global shared knowledge base, scaling innovation and enabling the better use of resources and opportunities to tackle shared global learning challenges, not only within but between networks.

### 2 - Innovation ecosystems

Some cities and regions are involved in designing deliberate conditions that drive and accelerate radical innovation - such as new designs for schooling - through the combination of multiple players, policies and platforms. These innovation ecosystems tend to contain traditional and new education providers, formal and informal learning opportunities, the involvement of business, edtech developers and providers and higher education, and are supported by digital technology.

### 3 - Learning ecosystems

Learning ecosystems comprise diverse combinations of providers (schools, businesses, community organizations as well as government agencies) creating new learning opportunities and pathways to success. They are usually supported by an innovative credentialing system or technology platforms that replace or augment the traditional linear system of examinations and graduation. They need not, however, be confined to their geographic location in terms of resources overall. They may exploit the technologies now available to choreograph global learning resources.



# In this report we explore the potential of learning ecosystems: first through a rapid review of recent writing by leading authors, and next, through nine case studies of initiatives at various stages of maturity.

## Throughout we ask:

- What are the barriers and enablers faced by attempts to create or catalyse learning ecosystems?
- Do real-world learning ecosystems really represent a new learning paradigm, as described in the literature?

Through reviewing the literature we found that writers exploring the concept and potential of learning ecosystems appear to be driven by a shared sense of the predicament facing education systems.

## They highlight three interrelated issues:

1. The exhaustion of the existing educational paradigm, on its own terms;
2. The need for a shift in purpose in the context of rapid, fundamental change
3. The need for a new organizational paradigm to deliver this shift.

Other questions arise around the extent to which learning ecosystems emerge naturally in response to conditions of twenty-first century connectivity, or whether they require intentional design. It seems that this apparent tension between 'tight' design and control on the one hand, and desire for 'loose' distributed, organic and dynamic processes on the other, might be central to our understanding of the success of learning ecosystems to deliver on outcomes and the role they might play in challenging or replacing the existing paradigm of organised learning.

Our rapid review of the learning ecosystems literature reveals that a substantial amount of thought has been applied to the concept: however, very little empirical research has been undertaken so far to discover real world examples of learning ecosystems and to notice the changes taking place in and around them for learners and for providers.

In this next chapter of the report we explore nine learning ecosystems at various stages of maturity at the time of writing.

## Our set of case studies includes learning ecosystems which:

- Are diversifying learning resources and pathways for learners
- Are activating and sharing resources for learning in new ways from diverse sources
- Are dynamic in composition and porous around the edges
- Are supported by helpful infrastructure
- Comprise formal and informal learning institutions, traditional and new entrants
- Have distributed governance
- Are learner driven or have learner agency at their heart
- Make an attempt to meet twenty-first century challenges in some way, beyond academic attainment.

## We excluded initiatives that are:

- Networks of schools alone, however innovative
- Partnerships between schools and community or business where learning pathways are wholly controlled by the school
- Constellations of diverse provision without common purpose, intentionality or platform (e.g. the resources of a city)
- Historic i.e. no longer in existence

### The nine learning ecosystems explored in this chapter of the report are:

1. Educació360, Catalonia, Spain
2. LRNG, various cities, USA
3. Kuopio Culture Path, Kuopio, Finland
4. Jump Start, Louisiana, USA
5. Swinburne University of Technology, Melbourne, Australia
6. The Metropolitan Regional Career and Technical Centre 'The Met', Providence, Rhode Island, USA
7. LenPolyGrafMash, St Petersburg, Russia
8. Remake Learning, Pittsburgh, Pennsylvania, USA
9. RSA Cities of Learning, various cities, UK

To better understand the barriers and enablers to learning ecosystems we looked at the governance and funding arrangements, new roles for people and organizations, the role of context and place, and implications and opportunities for assessment in each case study. They are explored deeply in chapter five and synthesized in chapter six.

To understand whether real-world learning ecosystems really represent a new learning paradigm, as described in the literature, the insights drawn from across the nine case studies and rapid literature review provide two new frameworks to consider when thinking about learning ecosystems.

### The frameworks relate to:

#### 1- Stages of learning ecosystem development

We discern four stages through which learning ecosystems progress as they develop and grow: hypothesis and visioning, catalysing and initiating, dynamic experimentation, and mainstreaming or sustaining. We identify questions and dilemmas that an ecosystem might meet at each stage, and pose the question of whether a learning ecosystem could or should ever aim to mainstream or sustain, or remain in a 'dynamic experimentation' phase for as long as possible.

#### 2- Impact of learning ecosystems on existing learning provision

We analyze the cases' potential for a new paradigm of learning across two axes. In doing so, four broad categories of learning ecosystems have been discerned:

1. Expanded formal offers designed with pre-determined curricula and/or outcomes;
2. Industry or community led initiatives where the skills requirements of a group from outside education (e.g. an industry sector) leads them to put in place conditions to enable new learning pathways and opportunities that meet the industry's need;
3. New designs and new platforms where a high degree of learner agency meets intentional design and results in new wholesale designs for organised learning.
4. Responsively dynamic where learner agency meets a dynamic and self-sustaining community of providers eager to support and enhance learning.

This research concludes that a movement towards learning ecosystems has the potential to transform how learning happens. In addition to key findings the report offers a series of lessons for learning ecosystem pioneers and some hallmarks of edging towards a new paradigm.

The landscape remains on the whole amorphous. As such it is important not to be too uniform in delineating ecosystems. While there are theoretical accounts of learning ecosystems, there is little empirical evidence on this concept. This report is a starting point; the need now, however, is to collect and share many more examples of initiatives in the field and most particularly from the global south.



# Chapter 2

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**Background: Why is Everyone Talking about Ecosystems?**

Education systems globally are waking up to the step changes they will have to make if everyone, young and old, is to thrive in our increasingly digital, complex and rapidly changing world.

## The learning challenge posed by twenty-first century conditions

It is clear that education needs to become an avenue through which global society will overcome the challenges, gaps and barriers we have created: the digital divide, the imbalance of information flows, the growing economic and social inequality, religious, ethnic, and cultural divides, and the extreme ecological pressures we are placing upon the Earth. The profound disruption of labour markets, as a result of technological advance and penetration, is but one of the unprecedented social - and therefore educational - challenges to be faced.

To meet these challenges the 'why', 'what' and 'how' of teaching and learning needs to be different to that of 100, 50 or even 20 years ago (Hannon & Peterson, 2017). The challenge to public education has grown not diminished. The subject-centric, didactic, one-size-fits-all model is widely recognized as insufficient. Internationally, this is recognized by a number of agencies working to transform education - including now the OECD with its Education 2030 project (OECD, 2018). Looked at from a truly global perspective, the scale of challenge is even more immense. According to UNESCO, and despite enormous progress, there remain around three quarters of a billion illiterate people in the world, mostly in developing countries of Africa, Asia, and Latin America (UNESCO, 2017). Today, 263 million young people under 17 don't get to school, facing multiple barriers to access. As the Brookings Institution has shown (Brookings, 2015), attempting to follow the path taken by already industrialized nations in such contexts will fail these populations, taking decades to reach comparable levels of learning gains.


Meanwhile, in developed public systems, change strategies have typically employed some common levers: alterations to accountability expectations, system-wide curriculum standards, or changes to the training and performance management of teachers. Strategies to raise levels of innovation, such as increasing school

autonomy and decentralization, have had some success. Some innovative school designs and new practices have emerged, and there is now a range of programs looking to develop and disseminate and evolve these (New Pedagogies for Deeper Learning, 2013; Atlantic Rim Collaboratory, 2016; Global Education Leaders' Partnership, 2009; Networks of Inquiry and Innovation, 2000). In some instances though, the broader effects of increased autonomy and decentralization have been system fragmentation through market forces, as in the UK (Greany & Higham, 2018).

To counter this, some systems have also implemented leadership policies designed to grow leadership capability with a systemic focus (Hallgarten, et al, 2016; Breakspear, et al, 2017). Predating this was the substantial effort to move from individual, free-standing schools (often in competition with each other), to school networks - either hard- or soft-wired in governance (Armstrong, 2015). Returns on these efforts at reform seem to be reaching their limit as learning gains and reductions in inequality are incremental at best and far from making the step change required. New ideas for optimizing systems of schooling, or creating a new paradigm in which they might play a part, are being actively sought.

If schools are to be the institutions that lead or play a major role in the needed transformation in education (rather than, for example, technology companies), then much more will be required than improved leadership capacity and the conventional repertoire of improvement strategies.

An active search is underway for new ways of learning and new organizational forms for education that will be consistent with the emergent social and economic reality. In such a context, perhaps it is unsurprising that inspiration for change is sought from biological, as opposed to mechanical, analogues.



*“The starting point must be around the holistic development of living in a better world - to be changemakers. I am convinced that ecosystemic approaches are necessary to move from mechanistic education systems to learner centric ones.”*

Ross Hall, Ashoka, expert interview

## Moving on from systems: the potential of ecosystems and ecological thinking

Education has to become everyone's business, and the more connected, intertwined and interdependent societies become, the greater the opportunity to leverage our collective efforts. As new education innovations, organizations, resources and relationships develop, we see opportunities to transform the 'why', 'what' and 'how' of teaching and learning emerging.

Thought leaders and system leaders alike have begun to explore whether the opportunity exists to create dynamic, diverse and evolving learning ecosystems which enable all young people to be lifelong learners, leveraging a broader and more powerful range of assets than ever before. Such a reconfiguration of education systems and our collective mindset promise to create the conditions for more dynamic and powerful collaborations which stimulate and enable innovation.

In this hypothesis, ecosystems can also cultivate an environment in which high impact innovations scale and spread. Instead of bureaucratic or market incentives to get people to do new and complex things, a system running on a shared understanding of vision and objectives, with people modelling innovations for and from one another in different contexts, creates a different dynamic for change.

Thinking 'system' (not just isolated innovations) is clearly imperative; but the concept of 'system' needs to be rethought too. If the promise of local learning ecosystems is to be realized, then system leaders at jurisdiction levels will need to reposition themselves so that rather than being primarily providers of education, they intentionally create a platform for a diversity of players, and offer vision, stewardship and enablement to this (Global Education Leaders' Partnership, 2013).

The term 'system' can have negative connotations because of its association with top-down reforms, which have limitations even in successful systems. In this vision, ecosystems can enable collaboration and innovation without bureaucratic and/or market control: they may become horizontal, or bottom-up.

*"Why are we looking to ecosystems? Because they provide the diversity of resources. There are many types of players, sources of money, talent, knowledge and so on. And diversity of governance. Such systems are more able to withstand shocks and respond, for example, to disruption in the jobs market: they should be able to evolve faster.... Underdeveloped ecosystems are everywhere: there's a huge variety of proto ecosystems out there; many of them have existed for decades. The majority of large cities on the planet have a huge variety of undeveloped opportunities for learners across the life-cycle"*

- Pavel Luksha

Skolkovo Education Development Center, and Global Education Futures, expert interview

*"I want to change the hierarchy of the education system in Finland. It has reached excellent outcomes, however, we're in a different world from where we started. A system-wide educational ecosystem is a different way of thinking. A decentralized system exists in Finland; we want to go one step further by removing hierarchical barriers between groups. Municipalities (education providers) are given free reign to do whatever they like. Teachers are seen as experts. Power is already spread. I would like to see a system breathing in and out; whenever there is a problem, it doesn't need to be solved by the hierarchy, but instead by someone on the ground."*

-Anneli Rautiainen Finnish National Agency for Education, expert interview

## Ecosystemic thinking: a biological metaphor in response to complexity

Further, some of the key features of biological ecosystems seem a perfect fit for the change requirements in education (Luksha, et al, 2017) making it easy to see why they are proving metaphorically attractive as a way of thinking about the future. Ecosystems both provide and require:

### Diversity:

Multiple providers that fulfil many roles, allowing for "structural stability" of the ecosystem.

### Maximum productivity and resource cycling within the ecosystem

Resources including knowledge, are optimized and distributed so nothing goes to waste.

### Dynamic adaptability:

Ecosystems can adapt and respond to learner needs and changes of institutional environments (this is the critical feature that distinguishes ecosystems from earlier, and more rigid, approaches of 'partnership').

### Scalability:

Ecosystems can operate on various scales, from learner groups or specific schools to the planetary community. It is worth noting that the application of the ecosystem metaphor to fields of human endeavour has a long history in disciplines other than education and learning. Ecosystem as both an analytical tool and a practical strategy has been explored in business and management theory for at least two decades (Moore, 1996) and complexity economics (Beinhocker, 2007) has been gaining ground for around the same period. In each case, the introduction of the ecosystem metaphor has been a response to the limitations of simple market equilibrium models or hierarchies for understanding and shaping systems, causing scholars to turn instead to an organic model that takes inspiration from biological work.

*"The notion of ecosystems, which derives from the field of evolutionary biology, offers a precise definition: an ecosystem is a community of interdependent living organisms in conjunction with the natural environment (air, water, soil, etc.): a forest, a coral reef, or a lake."*

(Chapin, 2002)

We note that it is the strengths of ecosystems which are foregrounded and not their fragility. They are threatened, and sometimes succumb to pollution, resource depletion, and invasive species. In the natural world these threats are usually (though not always) created by human activity. So, a question to be explored in the future, as local learning ecosystems develop and mature, will be: how resilient are they to the removal of initial catalytic funding, the entry of dysfunctional members or other unanticipated shifts in the environment? Furthermore, it will be observed that the case studies reported here are in the main from high income (or resource-rich) countries. Yet natural ecosystems occur in (relatively) constrained environments (deserts and polar regions). It could be argued that it is even more imperative that learning ecosystems should be developed in low-income countries, more optimally to utilize all the resources that might be available for leaning but not yet exploited.

Urie Bronfenbrenner, a Russian-American developmental psychologist, introduced an ecological systems theory of child development to the US early years system in the 1960s (Bronfenbrenner, 1979). Influenced by fellow developmental psychologist Lev Vygotsky (Vygotsky, 1978), Bronfenbrenner's bioecological model offered a framework for understanding human development through the lens of the different environmental systems with which an individual interacts. Fast forward to today and the use of ecosystemic language features strongly in the debate around the future and purpose of education systems (Pritchett, 2013) with a similar intention of embracing the complexity that surrounds an individual's experience of learning and development in the various systems and environments designed to support these.

Finally, the ecosystem metaphor makes a powerful connection to what is precious in our world, and what is being lost. The serious and mounting challenges to the viability of the planet for humans and the mass extinction of other species have been identified by some as the single greatest learning challenges of our age (Clarke, 2012).

*"Here in Canada we're thinking about ecosystems from a biological perspective. I think we want a nature-loving and human-loving education system going forward - not tolerance but appreciation of diversity - a respectful environment where a range of perspectives are valued."*

Judy Halbert, Networks of Inquiry and Innovation, expert interview



## Farm Roots Mini School, Canada

In September 2017, the Delta School District in BC gave students in Grades 10 to 12 the option to venture into designing, building and managing a farm by joining Farm Roots Mini School. Led by experts in education, agriculture and sustainability, Farm Roots was developed out of a spiral of inquiry (Networks of Inquiry and Innovation, 2000) by students with a respect for local land who wanted fellow students to understand the importance of agriculture. The timetable is much more flexible than a typical secondary school and course content is wrapped around the project of building and running the farm. The 30 students alternate between attending Farm Roots classes (social studies, science and entrepreneurship) and their regular school classes every other day. Both students and teachers are clear about what needs to be done on the farm and what students want to do; this understanding guides the pace of the course work and the flow of the timetable.

Farm Roots has developed a good relationship with local farmers who play an advisory role and support the school with finances, grants and resources. Professors from Kwantlen University for Agriculture are based at the site once a week and are responsible for accrediting the course. In May 2018, Farm Roots won the Edcan Ken Spencer Award for Innovation in teaching and learning.

## A typology of 'ecosystem' usage in education

The power of the ecosystem metaphor has led both to a richness of debate, and some confusion over what is meant by the term. For clarity we offer here a typology of ways in which the term 'ecosystem' is used.

The first distinction we want to make is between the use of the term ecosystem as (i) an analytical tool, and (ii) as a noun denoting an initiative or set of activities. As an example of the former, for some time the Global Education Leaders Partnership (led by, among others, an author of this report) has used an 'innovation ecosystem grid' to assist leaders of education systems to analyse and maximize the innovation potential of their education systems (Global Education Leaders' Partnership, 2013). Separately, Ken Spours and Anne Hodgson have used the analytical lens of an ecosystem to interrogate local education provision in England, aiding our understanding of how and why certain localities reproduce educational inequalities (Hodgson & Spours, 2017).

This report is influenced and informed by analyses, but is empirical: in it we seek to describe attempts to bring learning ecosystems into being as initiatives, programs or new sets of relationships. In our empirical research we have developed a very simple typology of ecosystem, to bring clarity and focus to our work and, we hope, to help others navigating this territory.

### Our research uncovered three different kinds of ecosystem, as follows:

- Knowledge sharing ecosystems, operating at global or national level
- Innovation ecosystems, operating at city or jurisdictional level
- Learning ecosystems, operating at city or local level

The typology is necessarily imperfect and does not pretend to describe or categorize precisely all the processes and entities currently thought of as ecosystems in education and learning. Nor are they mutually exclusive. The following expands on these categories and offers some examples.

## Knowledge sharing ecosystems

This type of ecosystem comprises complex, evolving networks of organizations including think tanks, foundations, governmental and global agencies and others who are consciously connecting to facilitate the sharing of new knowledge about education and learning, innovation, funding opportunities, and more. It is largely concerned with building the global shared knowledge base, scaling innovation and enabling the better use of resources and opportunities to tackle shared global learning challenges, not only within but between networks.

Examples include the co-conveners of the Global Education Ecosystem advocacy effort, whose forthcoming report, Investing in Knowledge Sharing to Advance SDG Four, calls for new means for how to improve knowledge sharing across borders in education (Centre for Global Education at Asia Society, Results for Development, Teach For All, The Boston Consulting Group, and the World Innovation Summit for Education, 2018). The aim here is to build an infrastructure that enables multiple stakeholders and initiatives to share knowledge in ways that are more organic, comprehensive and self-directed than in a traditional network. Further examples would be the Global Education Leaders' Partnership (Global Education Leaders' Programme, 2009) and the Global Education Futures Forum (Global Education Futures, 2008).

## Innovation ecosystems

Some cities and regions are involved in designing deliberate conditions that drive and accelerate radical innovation, such as new designs for schooling, through the combination of multiple players, policies and platforms. These innovation ecosystems tend to contain traditional and new education providers, formal and informal learning opportunities, the involvement of business, edtech developers and providers, and higher education, and are supported by digital technology (Abdul-Jabbar 2015).

By All Means (below) is an example of an innovation ecosystem. Others include the New York iZone which partners not-for-profits and technology companies with groups of schools to drive the development of radical new models, and the deliberate fostering of diverse combinations of partners via platforms such as 4.0 schools in New Orleans, USA following the devastation wrought by Hurricane Katrina.

## By All Means, EdRedesign Lab, USA

Professor Paul Reville founded the EdRedesign Lab in 2014 at the Ed School, following his five years as secretary of education for the state of Massachusetts, in the US. The goal was to study and create ways that cities and towns could address all the needs of children, especially those living in poverty, by breaking silos. Instead of thinking schools alone could “fix” problems in education, the lab brings together people from child welfare departments, local law enforcement, and city health, as well as city mayors.

By All Means was created to work with mayors and city officials from six cities across America to tackle a childhood challenge specific to their communities. The cities served as labs as they tested different methods of making deep change in and out of schools. During that time, the groups met regularly to learn from one another and strategise. In May 2017, the groups met for the final convening. They also released case studies for five of the six cities involved that include exactly what their plan was, how they handled funding, elements that affected success, and roadblocks that got in the way.

## Learning ecosystems

Learning ecosystems comprise diverse combinations of providers (schools, businesses, community organizations as well as government agencies) creating new learning opportunities and pathways to success. They are usually supported by an innovative credentialing system or technology platforms that replace or augment the traditional linear system of examinations and graduation. They need not, however, be confined to their geographic location in terms of resources overall. They may, as in some of our case studies, exploit the technologies now available to choreograph global learning resources. In that sense they can be 'global'.

Learning ecosystems feature many of the same characteristics as innovation ecosystems, for instance new and diverse providers involved in education enabled by low barriers to entry. However, learning ecosystems focus exclusively on delivering powerful, often radically diverse, learning experiences for young people, whereas innovation ecosystems tackle the wider systemic challenge of bringing about change in education. Learning ecosystems are a possible, though not guaranteed, product of an innovation ecosystem.

On this basis and for the purposes of this report we have settled on the following definition of learning ecosystems:

Learning ecosystems are entities already in existence providing directly to learners. They comprise open and evolving communities of diverse providers that cater to the variety of learner needs in a given context or area.

The remainder of this report focuses exclusively on learning ecosystems, since they are the most direct route to creating new learning opportunities for learners now. At the same time, learning ecosystems lay the groundwork for deep and lasting change in education systems in the future by embracing, for example, digital technology and alternative credentialing, which have the potential to variously disrupt and enhance education for all learners (Price, 2013).

Learning ecosystems may also have the potential to combine with other ecosystems in, for example, the digital technology industry of Silicon Valley and elsewhere, creating more significant change within and beyond education.

## Scope and purpose of this report

In this report we first explore the potential of learning ecosystems through a rapid review of recent writing by leading authors. Next, through nine case studies of initiatives at various stages of maturity, we test the real-world potential of learning ecosystems, and ask:

- What are the barriers and enablers faced by attempts to create or catalyse learning ecosystems?
- Do real-world learning ecosystems really represent a new learning paradigm, as described in the literature?

The nine selected cases are specifically and deliberately learning ecosystems rather than knowledge sharing or innovation ecosystems as we have previously defined them. We wanted to learn whether the reality on the ground lives up to the ideal learning ecosystems types envisioned in the largely theoretical literature.

### Our set includes learning ecosystems, which:

- Are diversifying learning resources and pathways for learners
- Are activating and sharing resources for learning in new ways from diverse sources
- Are dynamic in composition and porous around the edges
- Are supported by helpful infrastructure
- Comprise formal and informal learning institutions, traditional and new entrants
- Have distributed governance
- Are learner driven or have learner agency at their heart
- Make an attempt to meet twenty-first century challenges in some way, beyond academic attainment.

*“An educational ecosystem can be defined as a dynamically evolving and interconnected network of educational spaces, with individual and institutional providers, that offer a variety of learning experiences to individual and collective learners across the learning life-cycle” -*

Global Education Futures report, 2018

*“Where you have the diversity of players required for an innovation ecosystem you will also have the conditions for a learning ecosystem”*

Rosie Clayton, expert interview

### We excluded initiatives that are:

- Networks of schools alone, however innovative
- Partnerships between schools and community or business where learning pathways are wholly controlled by the school
- Constellations of diverse provision without common purpose, intentionality or platform (e.g. the resources of a city)
- Historic (no longer in existence)

Of course our ideas of what a learning ecosystem might be and could do have been heavily influenced by the hypotheses posed in the literature. However, we hope we have avoided becoming 'captured by the metaphor' and instead have set out to learn as much as possible from what the closest empirical examples could tell us. In so doing we hope we have added significant value to this promising, emergent field by sharing stories and models that together indicate a direction of travel, complete with enabling shortcuts and signalling pitfalls to avoid for systems and providers already embarking on this exciting journey.



# Chapter 3

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Literature Review: What Do We Know about Learning Ecosystems?

## Introduction: An emergent field

The literature concerned most directly with learning ecosystems is both relatively recent and visionary or theoretical in nature. A mature field of theoretical and empirical research on learning ecosystems has yet to emerge.

Several organizations have suggested strong rationales for taking the idea of learning ecosystems seriously, backed by a range of more advanced fields of both educational and non-educational research, and citing a growing number of prototypical examples. These organizations include Ashoka (The Global Change Leaders, 2018), GEF (Global Education Futures, 2008) and KnowledgeWorks (KnowledgeWorks, 2014, 2015) who have, with a variety of emphases and certainty, identified the learning ecosystem as a potential 'new paradigm' for the future organisation of learning.

Sitting behind much of the thinking and writing on learning ecosystems are non-educational fields: economics, business and complex systems (Moore, 1996; Maroulis, et al, 2010; Snyder, 2013; Scharmer, et al 2013); some new fields of educational research on personalized learning, digital learning platforms (Laurillard & Kennedy, 2017), innovations in assessment, and micro-credentialing (Open Badges, 2011); as well as more established literatures on questions of place based learning (Facer, 2009), economic regeneration (OECD, 2017) and engagement of parents, communities and industry in the business of education (Henig, et al, 2015).

This rapid review cannot do justice to these fields. We focus here on the core propositions of the literature on learning ecosystems to see how these have been conceptualized and how the research and thinking to date can help to shed light on the successes and challenges revealed in the nine case studies.

## Organisation for Environmental Education and Protection, Colombia

Those living in a city will understand how difficult it can be to connect with nature and see the impact of society's unsustainable impact. This challenge is heightened in Colombia, where a devastating armed conflict has long kept urban residents from venturing out into rural areas. If they did, they would see how the conflict has wrought heavy deforestation.

Ashoka Fellow Luis Alberto Camargo decided he needed to raise the environmental consciousness of Colombia's future caretakers - urban youth who have little to no connection with nature - to protect these resources. Through his Organization for Environmental Education and Protection (OpEPA), Camargo instils an affinity with nature in these young people, and works to inspire a desire to take action to preserve it. Founded in 1998, OpEPA funds environmental courses for Colombian students. This includes everything from in school hands-on classroom activities to month-long wilderness excursions. More than 50,000 underserved young people have taken part in programs over the past decade. In 2007, OpEPA expanded

*“Given the transforming economic and social environments of the twenty-first century, ‘industrial’ approaches to education are increasingly in-congruent with our current and future context. This mismatch leads many stakeholders within and outside of the education system toward the belief that ‘educational systems are broken’.*

Global Education Futures report, 2018

to the United States, extending the deep social impact that Camargo wants to spread globally so that the future leaders of Colombia and other countries become dedicated stewards of the earth.

Writers who believe the purpose of education is to support each child to find their path to participation in a global society tend to envision learning ecosystems that are designed with each individual child at the centre. In the USA, KnowledgeWorks has long advocated for a shift in the focus of education from institutions to individuals. They see learning ecosystems that mobilize the resources of a community or locality to meet each child’s individual needs, interests and goals, as critical to radical personalisation of learning.

Other writers see learning ecosystems as an opportunity to better match local educational provision with high value skills specific to the local context and community (Buchanan, Anderson & Power, 2017; Green, 2013). ‘Skill ecosystems’, often connected with particular social and economic development trajectories (such as regeneration), are concerned with workforce development in and for a place.

## A shared analysis of the case for change

Writers exploring the concept and potential of learning ecosystems appear to be driven by a shared sense of the predicament facing education systems. They highlight three interrelated issues:

1. The exhaustion of the existing educational paradigm, on its own terms.
2. The need for a shift in purpose in the context of rapid, fundamental change; and the need for a new organizational paradigm to deliver this shift.

## Exhaustion of the existing educational paradigm

Most education systems are struggling to keep pace with the rapid changes in society, the workplace and across the world. They are failing to tackle some of the key issues (Perkins, 2014) of our time, and at worst, are contributing to them. The growing gap between the education systems we have, and what the future needs from education (Facer, 2011; Clayton, et al, 2008) is the burning platform that has sparked a call for a paradigm shift (Robinson, 2010), which learning ecosystems may begin to offer.

In many systems (not all), top-down reforms have created a number of perversities, often leading to:

- Unprecedented anxieties and stress levels of students widely attributed to high-stakes assessment (OECD, 2015);
- Disillusioned and burnt-out teachers facing a loss of professional identity linked to high accountability regimes (National Education Union, 2018)
- A tendency of schools and practitioners to avoid risk-taking and therefore quashing the potential for emergent innovative practice (Cisco, 2010).

Incremental improvements in often narrow success criteria are met with diminishing returns, with a performance ceiling being reached in delivering on outcomes (Barber & Hill, 2014). Gaps in skills, achievement, and opportunity persist in even the most high-performing systems, and dissatisfaction amongst parents, business leaders and young people increasingly gain a collective and frustrated voice (British Chambers of Commerce, 2014; Hundred, 2018; The Varkey Foundation, 2018).



## Shift in purpose

Writers who have taken a holistic view of a wide and profound set of purposes for education often see ecosystems as part of the solution for delivering these (Hannon & Peterson, 2017; Fadel, et al, 2015).

For instance, GEF locates the need for learning ecosystems in a world view of a fundamentally transformed human project, one that includes, but isn't limited to an entirely altered set of values and relationships to the planet. They see learning ecosystems as capable of compensating for broader failures of public policies, and acting as a pathway to social transformation.

*“Education can become an avenue through which global society may overcome the gaps and barriers we have created: the digital divide, the imbalance of information flows, the growing economic and social inequality, religious, ethical, and cultural divides, and extreme ecological pressures we are placing on Earth.”*

Global Education Futures report, 2018

While there are well-rehearsed arguments that caution against attempts to use education (alone) to fix social problems, the ecosystemic way of working across sectors and stakeholder groups is seen to be a route to aligning provision beyond education, be it housing, poverty, welfare, health or urban planning.

Similarly, but with a strong emphasis on shifting intrinsic human values, Ashoka and others envision learning ecosystems to be suited to educating and empowering the whole human. Through empathy-based learning and an emphasis on human relationships and collective action, learning ecosystems can help shift human identity away from individualistic self-interest, towards one centred on humanistic change-making (Wagner & Compton, 2012).

*“We envisage new learning ecosystems in which whole communities work together to provide experiences that keep every young person on a journey to becoming a changemaker.”*

Empowering Young People to Create a Better World, Ashoka (2016)

## Shift in organisational paradigm

Generally, education provision around the world is organized into similar systems that tend towards standardized learning experiences and are largely resistant to reform. Learning in a system like this is primarily the business of schools and other formal education institutions. Policy in this scenario is a key lever, with which governments set agendas requiring education institutions, along with support agencies, to respond with a specified change, or limited range of changes, to practice on the ground.

Complexity now makes it impossible for these traditional organizational structures and policy levers to navigate. Reform efforts have been pushed to embrace complexity and move toward more flexible and adaptive approaches and constructs (Snyder, 2013). Leading systems thinkers have elevated self-organization as the strongest form of system resilience in the face of rapid, ongoing change (Meadows, 2008), and have emphasised the need to shift mindsets towards thinking in the interests of the entire ecosystem, rather than the interests of our individual self, or single groups of stakeholders (Scharmer et al 2013; Senge 2006). New ways of collective learning and acting within and across teams, organisations, and communities are emerging as part of an alternative discipline to the top-down mechanisms of the past, outlining a new path towards systemic change.

The penetration of digital technologies and the extent of global connectivity, the entry of new learning providers in global networks, and the exponential increase in speed of technological and societal change, are all simultaneously and fundamentally transforming the way education systems can and must be organized to deliver high quality learning for all (KnowledgeWorks, 2015). This is most urgent of all in the global south. Learning ecosystems offer a more flexible and adaptive approach.

*“What learning cities and regions have in common is an explicit commitment to placing innovation and learning at the core of development. All seek to sustain economic activity through various combinations of lifelong learning, innovation and creative uses of information and communication technologies.”*

Schools at the Crossroads of Innovation in Cities and Regions, OECD (2017).

*“It looks possible to create a flexible and radically personalized learning ecosystem that meets the needs of all learners and has the adaptability to keep evolving with our ever-changing world.”*

Innovating Toward a Vibrant Learning Ecosystem, KnowledgeWorks (2014)

*“As new education innovations, organisations, resources and relationships proliferate, we have the opportunity to put the pieces — some long-established and some new — together in new sequences to create a diverse and evolving learning ecosystem.”*

-Recombinant Education: Regenerating the Learning Ecosystem, KnowledgeWorks

## Urban Assembly School for Green Careers, USA

The Urban Assembly School for Green Careers (UAGC), based in New York City, recognizes that overcoming the planet's environmental challenges is the biggest task facing the world today. As today's economy becomes more green, many of the future's most promising careers will focus on solving the challenges of environmental injustice, and ensuring equitable access to quality living and resources for all citizens. UAGC are committed to building a learning community dedicated to personal and community empowerment, college and career readiness, and equity across students, families and school staff.

As a career and technical college, meaningful partnerships are established with private, non-profit and educational organizations to help UAGC fulfil its mission and provide students with essential knowledge about green careers and industries, environmental issues and professional relationships. Every curriculum is individualized to each student and students are coached by teachers to not just learn content, but learn how to learn. Classes are mixed wherever possible by grade to provide maximum opportunities for students to lead and be mentored by their peers. Every student is required to complete a 4-year pathway in a technical science, providing them with a broad introduction to both the important environmental issues and solutions, as well as potential pathways to either deeper study in college or entry into a career.

This demand-driven convergence of education and the world of work (Deegan & Martin, 2018) is often associated with higher education and vocational education (Crosling, Nair & Vaithilingam, 2015), and aligns to the rapidly growing field of entrepreneurial education (Mueller & Toutain, 2015). Drawing upon a number of regional development strategies, the OECD's 'Learning Cities' construct represents a well-developed conceptual framework for this shift in purpose of education.

## Education City, Qatar

Launched in 1997, Education City is an initiative of Qatar Foundation that houses educational facilities from school age to research level, branching campuses of some of the world's major universities. Students have the unique opportunity to cross-register for classes at multiple universities and pursue joint minors that allow them to take classes from different branch campuses, letting them create their own customised learning experiences. Professionals and students can nurture their entrepreneurial skills by working on real-life projects, research, and service learning opportunities at other QF centres, such as the technology hub at the Qatar Science and Technology Park (QSTP). Accelerator, incubation, and funding programs are also available.

The first 'Innovation in Teaching Week' was launched in February 2018 to discuss and share innovative teaching and learning practices. Throughout the week, lecturers from QF's partner universities, as well as guest speakers, provided insights into how to build innovative teaching and learning ecosystems that address the needs of learners in a complex and fast-changing world.

Interestingly, beyond research and thought leadership, a growing number of education systems are beginning to rethink the role of education in society. British Columbia (British Columbia Curriculum Redesign, n.d.; Tucker, 2018), New Zealand (New Zealand Education Conversation, 2018) and Portugal (OECD, 2018) are leading the way, engaging a broad range of stakeholders in 'big conversations' about what education should seek to achieve in their contexts.

### KnowledgeWorks see ten pathways for transforming learning through vibrant learning ecosystems (KnowledgeWorks, 2014) including:

- Creating new personalised learning cultures;
- Enabling the development of diverse learning structures;
- Developing human capital for personalised learning ecosystems;
- Developing a new, learner-focused data infrastructure;
- Enabling new forms of assessment and alternative credentialing.

GEF also see a transition towards learner-centered education as a critical feature of how education systems should be organised in the near future.

*“In order to create circumstances for “new” education, radical technological innovations need to be coupled with radical transformation of personal, relational, and systemic aspects of educational systems.”*

Global Education Futures report, 2018

GEF emphasize the need to redefine the concept of education as a cradle to grave process of learning and development support. Their vision of lifelong, self-guided learning expands the 'place' for learning beyond formal education institutions, from professional communities to fitness clubs, emphasizing the potential of face-to-tech as much as face-to-face learning opportunities.

Traditional institutional roles like quality assurance and funding strategies are, in their current form, fundamentally at odds with the ecosystemic way of working (KnowledgeWorks, 2014). The roles that universities and schools play must be reimagined as one of catalysing change themselves (Global Education Futures, 2018) through changes in their admissions practices or how they design learning experiences for their learners.

Schools and universities must rethink their core organisational and learning models, not just components of it, and must be learning organisations capable of adapting to change (OECD, 2017). Ashoka (Global Change Leaders, 2018) highlight the need for the role of educators and education leaders to evolve to one that leads change and mobilizes and enables the broader learning ecosystem, fostering community-wide ownership of learning (Hall & Schleicher, 2017).

## MC2, USA

MC2 STEM High School in Cleveland, Ohio was founded in 2008, as part of an initial wave of STEM-focussed schools now spread thickly across the United States. Early in the new century, Mayor Jane Campbell, along with Cleveland State University and companies such as Intel, began directing energies towards transforming Cleveland into a technology hub. MC2 was founded amidst this activity, capitalizing on the willingness of local institutions and employers to support, both ideologically and with resources, a new kind of school.

What sets MC2 apart from other STEM schools is the way it situates students within work contexts, preparing them for lives that are likely to involve continuous learning as part of work. Classes are held at learning sites belonging to businesses, universities and the city of Cleveland. Alongside their project-based classes, students in the final years can opt to take internships to explore career options, ranging from three weeks to as long as a year. The school's extensive links with local businesses means that every internship is supervised by a workplace advisor.

The school-based internship coordinator ensures that students are well matched and evaluates a student's reflective work to ensure they are gaining value from their placement.

GEF highlight the importance of developing effective 'integrators' that enable learners to move between learning spaces in a seamless way (Global Education Futures, 2018). If education is to be ecosystemic rather than just another fragmented system, a learning portfolio that tracks learning achievements or competencies will need to be universal and transferable in a way that includes institutions beyond school, college or university.

They also identify global learning platforms as having a critical role to play in learning ecosystems (Global Education Futures, 2018). While recognizing the existing shortcomings of online learning that are widely rehearsed elsewhere (Laurillard & Kennedy, 2017), its refinement and proliferation over the next 20 years will bring huge disruption to the current system and open up opportunity to learning ecosystems.

## Conecturma, Brazil

Conecturma is a Brazilian not-for-profit that has launched an educational platform teaching students between the age of three and eleven years old how to read, write and count. It includes digital and printed elements that maximize the use of technology as a teaching tool. The teaching method is tied together through storytelling and characters that are developed throughout the school year. For many teachers working in Brazil, the desire to innovate exists, but often without the know-how. Conecturma aims to address this knowledge gap by providing on site technical and observational training to teachers using Conecturma. Teachers also become part of a digital learning community run via Whatsapp which offers support to teachers and encourages the sharing of innovative practices taking place in the classroom. Typically, parental engagement is hard in Brazilian public schools because of the lack of materials

and resources available for students to take home. Schools using Conecturma allow students to take textbooks home which sparks curiosity and interest from parents.

To raise awareness of the platform, innovative education practices taking place in Brazil and beyond, and politicians working hard to transform education policy, Conecturma have their own Youtube channel to discuss education in a way that people understand and begin to think differently about.

## Do learning ecosystems emerge, or are they designed?

Ecosystems in nature are emergent phenomena, evolving over millions of years through the interaction of diverse, constantly evolving organisms and environments. But of course, the metaphor only stretches so far: the education of whole populations cannot be left to such chance or such time-scales. Key thinkers in the education futures space recognize that intentional design, catalysing and programming are required to bring about desirable forms of ecosystem:

*“If we do not design intentionally for a vibrant learning ecosystem, we risk creating a fractured landscape in which only learners whose families have the time, money, and resources to customize or supplement their learning journeys have access to learning that adapts to and meets their needs.”*

Katherine Prince, *Innovating Toward a Vibrant Learning Ecosystem: Ten pathways for transforming learning* (KnowledgeWorks)

And yet there is a potential tension between the idea of an ecosystem that is intentionally designed (and to some degree therefore governed, controlled, or programmed) to deliver a particular desirable set of outcomes (e.g. equity, cultural fluency or twenty-first century skills - a 'tight' approach), and one that can vary from a design independent of central control and is therefore dynamic to adapt to changing economic realities (a 'looser' approach). Prince recognises this.

*“In the world that is emerging, we will be able to seed, cultivate, and spread transformation, but we will not be able to engineer it.”*

*ibid.*

Elsewhere, commentators have hypothesized that for a learning ecosystem to be truly dynamic there must be a high degree of learner agency involved.

*“Ecosystems can be a way of viewing groups working together without bureaucratic and/or market control. A flourishing ecosystem would be fed or informed by the whole ecosystem, as opposed to other types of control. Learner agency could create that change: for example, people voting with their feet as to where they access and assign value. The telling point is: Are learners genuinely able to aim for a whole range of different things within the ecosystem, exercising choice and agency? Or, is it a slightly different configuration to achieve the same narrow ends - learners actually aren't choosing what they want to do with it?”*

- Amelia Peterson, (expert interview with research team, May 2018)

It seems that this apparent tension between 'tight' design and control on the one hand, and desire for 'loose' distributed, organic and dynamic processes on the other, might be central to our understanding of the success of learning ecosystems to deliver on outcomes and the role they might play in challenging or replacing the existing paradigm of organised learning.

## Rahhal, Dubai, The United Arab Emirates

Rahhal is part of 10x, a Dubai Future Foundation (DFF) initiative to take Dubai ten years into the future in just two years. It aims to provide a creative and innovative alternative to mainstream education, one that views the community as an asset and recognizes learning wherever it occurs, regardless of age. The vision of Rahhal - to see the world as a classroom - is to be underpinned by Rahhal's fully customizable platform which allows organizations to become learning providers. The platform will be the conduit that harnesses the community's knowledge, skills, and experiences into learning opportunities (approved by Dubai government) which are then connected to individual learners.

Rahhal will provide diverse learning opportunities for both children and adults with special educational needs and those with specific interests so that parents can easily supplement their child's education. Adults are to be provided with flexible, modular learning that can be used to further their careers and enrich their lives. Rahhal is currently in a pilot phase and will be made available to a greater number of learners throughout 2018.



# Chapter 4

— Learning Ecosystems in the Real World: Our  
Definition, Criteria and Methodology



## Our rapid review of the learning ecosystems literature reveals that a substantial amount of thought has been applied to the concept.

However, very little empirical research has been undertaken so far to discover real world examples of learning ecosystems and to notice the changes taking place in and around them for learners and for providers. In this next chapter of the report we explore nine learning ecosystems at various stages of maturity at the time of writing. We also address our high level research questions, as follows.

- What are the barriers and enablers faced by attempts to create or catalyse learning ecosystems?
- Can we see the emergence of a new paradigm of learning ecosystems happening on the ground?

We also developed an inquiry framework of more detailed operational questions to help us understand how learning ecosystems work and what if any common characteristics they demonstrate. The full sets of questions can be found at Appendix 1 to this report, but in particular we asked these four questions of every case study to begin to understand the barriers and enablers faced by attempts to create or catalyse learning ecosystems.

- What kinds of governance and funding arrangements are in place?
- What are the implications for sustainability, diversity, dynamism?
- What kinds of new roles for people and organizations are required?
- To what extent are learning ecosystems context and place specific? And are there any implications for scaling as a result?
- What are the implications and opportunities for assessment: is there a need for innovation in credentialing and badging?

### And of course we asked:

- What is the impact so far?

As a reminder, our working definition of learning ecosystems is as follows:

*“Learning ecosystems are entities already in existence providing directly to learners. They comprise open and evolving communities of diverse providers that cater to the variety of learner needs in a given context or area.”*

### On adding value and being useful

Our criteria for scoping and selecting case studies balanced finding examples that would best help us to answer our research questions, requiring a degree of longevity and a certain amount of formality, while staying as true as possible to the spirit of the shift to a biological lens, suggesting sampling from a more emergent, organic field with the possibility that less could be observed and codified.

Our final selection of nine case studies also reflects an attempt to ensure a spread in terms of geography, level of maturity, and source (i.e., whether initiated by a school, higher education, government or not-for-profit organization). However, our cases reflect the simple fact that there are more learning ecosystems in the US than elsewhere.

It is also worth noting that our cases demonstrate a perhaps inevitable bias towards those that are most visible, most programmatic and well-funded. As a result we have privileged a certain kind of learning ecosystem: intentional, named, led by one or more organization or held together by a specific platform. More emergent, grass roots, and distributed learning ecosystems may exist that are less visible by virtue in part of their ecosystemic characteristics such as governance distributed between organizations. These may also be more likely to exist in more diverse geographies than we have been able to cover here - indeed we hope so! Thus far, language barriers and reduced visibility (for western researchers) has meant we have not been able to explore these. We hope too that this paper invites the identification of further examples that can enrich our understanding of the potential of learning ecosystems of all kinds.

### The nine learning ecosystems explored in this chapter of the report are:

1. Educació360, Catalonia, Spain
2. LRNG, various cities, USA
3. Kuopio Culture Path, Kuopio, Finland
4. Jump Start, Louisiana, USA
5. Swinburne University of Technology, Melbourne, Australia
6. The Metropolitan Regional Career and Technical Centre 'The Met', Providence, Rhode Island, USA
7. LenPolyGrafMash, St Petersburg, Russia
8. Remake Learning, Pittsburgh, USA
9. RSA Cities of Learning, various cities, UK

### To remind us, this set includes learning ecosystems, which:

- Are diversifying learning resources and pathways for learners
- Are activating and sharing resources for learning in new ways from diverse sources
- Are dynamic in composition and porous around the edges
- Are supported by helpful infrastructure
- Comprise formal and informal learning institutions, traditional and new entrants
- Have distributed governance
- Are learner driven or have learner agency at their heart
- Make an attempt to meet twenty-first century challenges in some way, beyond academic attainment.

### We excluded initiatives that are:

- Networks of schools alone, however innovative
- Partnerships between schools and community or business where learning path ways are wholly controlled by the school
- Constellations of diverse provision without common purpose, intentionality or platform (e.g. the resources of a city)
- Historic (no longer in existence)

We have been in touch with a much wider range of interesting and sometimes ground-breaking initiatives than we have included in our nine. Some were not included because they met our criteria less well, and sometimes we were unable to access relevant contacts to conduct interviews. Where possible, however, we have included these as mini case studies distributed throughout the report and taken together they represent a wide diversity of types of initiatives in this space.

### Each full case study has been compiled on the basis of:

- Interviews with experts who are both knowledgeable and well connected in the field, to help frame our inquiry and definition and identify potential case studies. A list of the experts consulted can be found in Annex 1.
- Interrogation and selection of case studies using initial interviews and criteria that are refined and developed through interaction with real cases.
- Deep dive interviews with representatives from our chosen case studies, where possible involving a 'diagonal slice' of strategic leaders, partners, providers, and learners.

# Chapter 5

## 1. Educació360, Catalonia

Full time learning in and out of school for all children and young people in Catalonia.



### The ecosystem at a glance

#### What is the learning ecosystem?

An alliance of municipalities and partners committed to making high quality out-of-school learning opportunities available to all children and young people in Catalonia.

#### When was it established?

The Alliance has been established for two years although some of the pilots pre-date the establishment of the Educació360 network.

#### To what extent has it scaled?

52 local authorities and 48 other partners from across Catalonia have signed up, and 11 localities are actively engaged in pilot programmes.

## Overview

Jaume Bofill Foundation, the Diputació de Barcelona and the Federation of Movements for Pedagogical Renewal have teamed up to promote the idea of Educació360 or 'full-time learning' for all children and young people in Catalonia. Against a background of debates about the length of the school day and in the inequality of families' ability to pay for after school activities, the Educació360 Alliance seeks to enshrine the right of all young people to a coherent and high quality out-of-school learning offer, backed by state-wide policy and operationalized by municipalities.

To date, 34 local authorities have signed the manifesto and joined the network, of which 11 are actively piloting approaches to how they can make the offer a reality in their locality.

*"We are a 'small big' town and the boys and girls of Castellbell and El Vilar deserve to have the same opportunities as in other larger towns and cities."*

–Cristina Carmona, Education Technician and Montserrat Badia, Mayor of Castellbell i el Vilar

### Pilots include:

- The tiny Castellbell and El Vilar (3,500 people) which has started music, tennis and robotics classes operating out of a spare nursery building.
- In Granollers the Etcètera de Tallers Educatius project links young people between 12 and 16 years old to the city's cultural facilities and life, creating alternative learning spaces for young people. Through workshops that involve professionals and technicians from the various institutions the hope is to revitalize the cultural fabric of the city while ensuring the development of competencies in young people.
- L'Hospitalet seeks to make the local area into an education eco-system by integrating an Educació360 offer with a local Environmental Education Plan through service-learning, curricular adaptation, the opening of outdoor spaces, the organisation of activities outside of school hours and the establishment of partnerships between schools, and cultural organisations and city officials.

While the manifesto makes reference to integrating in-school and out-of-school learning, the focus is very much on mobilising and organising community and municipality funded assets: seeking to change the context within which young people and schools operate, rather than starting with schools themselves. And while this might sound like an anti-school movement, it is not.

*"Some people talk about replacing school. We don't feel this is feasible or even desirable. We feel school has real value for universal education for all children and other values such as social cohesion... we still feel that school is a good model but has to change dramatically how it works and its role."*

– Monica Nadal, Jaume Bofill Foundation

Thus, in a parallel initiative, Escola 21, the Bofill Foundation is supporting efforts to 'transform the DNA of schools' to fundamentally change how schools operate. But the Foundation also recognises that the context in which schools operate needs to change too.

The goal for all municipalities involved in Educació360 is the same, but the emphasis is on concrete and sustainable local innovation, and the alliance expects that the shape of local ecosystems will be different everywhere. The alliance promotes some common 'key drivers' that enable learning, sharing and a common language between localities including digital badges, Educació360 week, and a Children's Passport.

*"It is important to learn and visit other experiences. But in the end it has to be very concrete and based in a territory, not an abstract model that can be copied and pasted."*

–Monica Nadal, Jaume Bofill Foundation

It is early days but the network hopes to be able to synthesise learning about governance, funding, and the role of partners and intermediaries in due course.

## Key features

- An Educació360 Manifesto that sets a common goal for municipalities and other partners.
- Policy and political advocacy to enshrine the entitlement to high quality out-of-school learning for all children.
- Network events, workshops and training to enable learning between pilots.
- No blueprint for pilot sites; each municipality works towards the goal in ways that suit their context.
- Annual Educació360 week, digital badge support, Children's Passport provided and promoted at network level.

## Impact

No impact data is yet available for pilots or the network as a whole.

*“Lots of organisations are committed to providing equal opportunities to all children: sports, language, arts, theatre, and through Educació360 they collaborate with other organisations around them so the programmes are more powerful and educational.”*

–Monica Nadal, Jaume Bofill Foundation

## Enabling conditions

The Educació360 Alliance is a practical initiative supporting the creation of local learning ecosystems. However, it is also a policy campaign seeking to enshrine throughout Catalonia an entitlement to high quality out-of-school learning for all children, and place a duty on municipal authorities to fund and quality assure providers to this end. As such, they are seeking to create the conditions in which every municipality would operate a local learning ecosystem of some kind.

The leadership of a coalition of foundations has been a key factor in the development of the Alliance so far. The convening power of well-networked and resourced local organizations has enabled representatives of different localities with shared values (expressed via the Educació360 Manifesto) to form an influencing body that is greater than the sum of its parts.

## Key insights and commentary

Learning that happens outside of school (sports, culture, outdoor activities, languages, music), can be as or more important to life success than what happens inside school, and is more unequally distributed.

It is possible to imagine a coherent, equitable learning offer for children and families without the participation of schools.

Municipalities have a leading role to play in ensuring equitable access to learning opportunities outside of school.

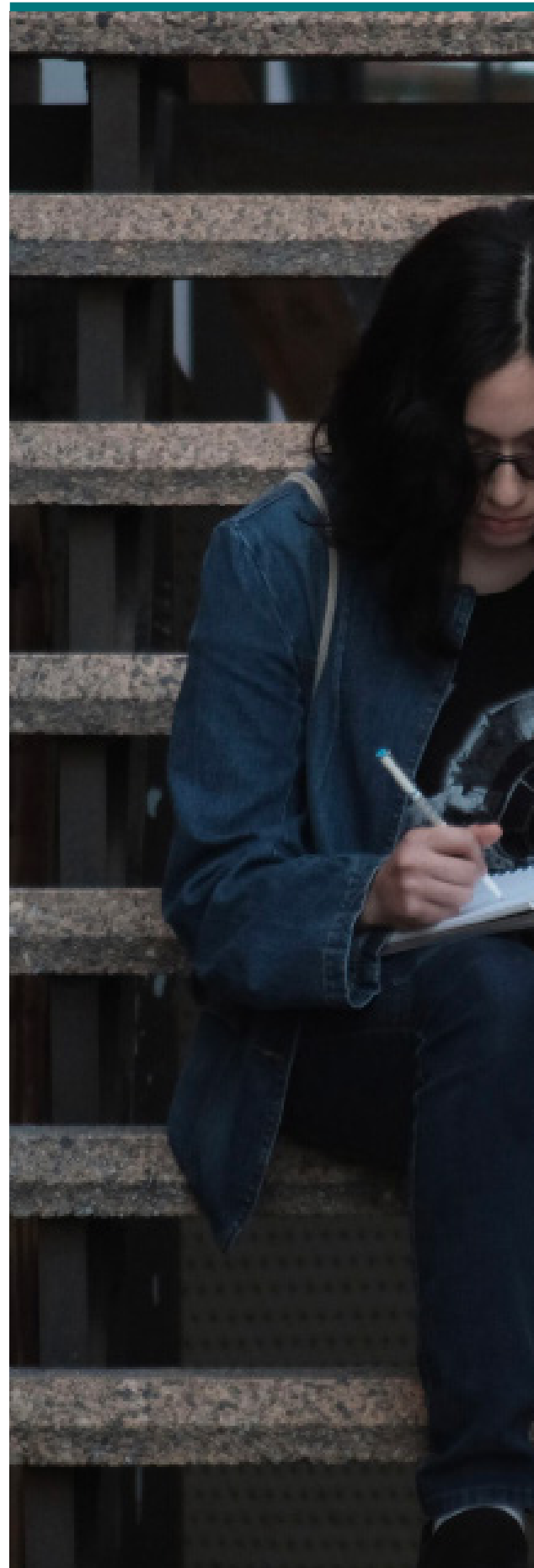
Each locality needs to develop its own approach, but certain enabling infrastructures (e.g. digital badge platforms) can aid integration and sharing.


The focus of the Educació360 Alliance on the role of municipal authorities grounds these multiple potential learning ecosystems in local context and place. Indeed the very appeal to a jurisdiction wide policy change in Catalonia to create an entitlement for every child places a premium on local responses and solutions.

The focus on the role of municipal authorities also makes clear that ultimately the governance and funding of the learning ecosystems would be held by state authorities if the campaign is successful. This of course comes with all of the opportunities for universalism and democratic oversight, and some of the potential downside of potentially bureaucratic processes of quality assurance that may prevent responsiveness to changing conditions. What is interesting is how the alliance is being built from the bottom up by engaging new players and creating a sense of a movement among partners. The foundations that are catalyzing the work in this phase foster diversity, ownership and new relationships that may mitigate some of the risks.

One purpose of the Alliance is to ensure that out-of-school learning is high quality, educational, and delivers worthwhile learning outcomes. Implied in this goal is a requirement (or opportunity) to think about how diverse, informal learning processes might be assessed and badged. The Alliance are supporting pilots to think about digital badging to address this, but also to provide a common language and platform across Catalonia.

## 2. LRNG, USA





Redesigning learning for the connected age so that all youth have an opportunity to succeed.

## The ecosystem at a glance

### What is the learning ecosystem?

LRNG works with city networks and organizations to connect out-of-school learning experiences to career opportunities through facilitating direct relationships supported by a digital platform and 'playlists' of digital badges. It aims to ensure that all young people, especially those from underserved communities, have inspiration and guidance to prepare them for life and work in the modern economy.

### When was it established?

LRNG was established in 2015 as a sub organization of Collective Shift, a not-for-profit organization dedicated to redesigning social systems for the connected age.

### To what extent has it scaled?

Since its launch, LRNG is implemented in 16 US cities and works with more than 30 major partners and supporters, including Electronic Arts, Fossil Foundation, GAP Foundation, and the National Writing Project, all of which provide experiences and opportunities to young people.

LRNG aim to scale up across the US to close the nation's opportunity gap and ensure all young people can develop their full potential in life and work.



## Overview

Collective Shift and its first endeavour, LRNG, build on more than ten years of research (Connected Learning Research Network, 2012), design, and implementation in learning and education. Seeded by the MacArthur Foundation, Collective Shift was created by a community of scholars, designers, practitioners, and policymakers, who began to design, test, and then redesign approaches to social systems and learning in the connected age.

LRNG's vision is for digital badges to unlock real life, real time opportunities for young people with the view that one day universities, colleges and employers will buy into badging. LRNG "playlists" are designed to equip youth with tangible skills and understanding that they can apply in academic and career settings.

## Key features

### Flexibility and transferability of digital badges

The LRNG platform lets young people access both local and national opportunities from their computer, smartphone, or tablet, free of charge. Youth pursue their interests with mentors, youth workers and peers, building new skills and habits wherever they are, whenever they want. Organizations can develop and co-design digital open badges and learning pathways ('playlists') linked to city priorities and skills needs by signing up to the LRNG website.

### Local vs global

Spanning 16 cities in the United States means that being hyper-local and having the functionality to customize and socialize playlists is critical for meaningful interaction with businesses and young people. Local thought, learning and implementation partners, or 'anchors', are identified in each locality to provide feedback on the platform to LRNG and Collective Shift.

*"It is not a standardized package being delivered to people; it is people sharing what they know how to do and participating in learning experiences"*

—Connie Yowell, CEO, LRNG

At the same time it is important that any skills and knowledge developed in one city are transferable and valued in other areas of the country. As such, playlists and badges have to be made global so that LRNG can make the best of what's happening at a local level visible, customisable and transparent elsewhere.

Playlists equip young people with tangible skills and understanding that they can apply in academic and career settings.

Thematic experiences, or 'playlists' are designed by LRNG partners and organisations. Playlists enable youth to

develop skills, mindsets and habits that are relevant for college and the workplace. Examples include conflict resolution, punctuality, professionalism and financial support. Every time a young person completes a playlist, they receive a digital badge that accredits their newly acquired skill. These badges are designed to unlock real world opportunities that include academic credit, internships and jobs.

### Userbase

Most platform activity occurs during summer employment programs, such as One Summer Chicago, the nation's second largest summer youth employment initiative serving over 31,000 young people each summer. LRNG have worked closely with the Career and Technical Department at Chicago Public Schools, but not to the same level of scale as their summer employment programs. While the intention is to engage with the formal schooling system in each of the cities, most schools have not so far been willing to trial something emergent at meaningful scale.

## Impact

- 50,000 users on the platform
- Over 500 organisations across the USA participating and creating learning pathways
- Over 150,000 learning experiences delivered
- 300 regional playlists and 33 national playlists published
- 30,000 accredited badges have been issued

## Enabling conditions

### Financial support for smaller organisations

In Chicago, there is a small grant-making budget for young organizations to build the capacity to use the platform. This budget provides them with the

*“Youth are engaged when a playlist doesn’t look and feel like a homework assignment. The most impactful playlists are when youth can make the connection between badges and opportunity.”*

–Jessica Rosenberg, Chicago Learning Exchange

time needed to develop the skills to issue badges and create playlists. Small organizations can apply for up to \$5,000 (USD) to create design challenges playlists, receive technical assistance and create badges. Many youth workers want to see their young people flourish and will encourage those they work with to take part and get involved with the platform.

### Relationships are essential for use

LRNG local partners and anchor organizations, such as Chicago Learning Exchange, access their dense networks to raise awareness of the platform, as well as allocate time for funding, training, and peer professional learning. LRNG believe that the platform would not be as effective if it is mandated, meaning new relationships have to be formed and constantly nurtured. The success of the platform relies on people seeing the benefit in creating or pursuing online learning pathways.

### Lack of young people means lack of use

LRNG has found that if playlists aren't designed with young people in mind (e.g., they are not interest-driven), they will fail to gain traction and opportunities will not be explored. LRNG has set up a youth council to test and review content for the platform. This involves testing playlists created by organizations, as well as the overall design of LRNG, to ensure that youth voice is the cornerstone of the platform.

### Assessment and learning are entwined

LRNG are mindful of integrating innovation and tools into a system that is already creating inequality. Therefore, the LRNG accreditation system is coupled with learning experiences and pathways to success. Rather than separate out assessment and learning, LRNG have created a system that allows learning to happen all the time. This enables youth

to easily demonstrate their competencies and pursue paths in ways that are meaningful for them.

## Key insights and commentary

- LRNG relies on the power of local learning and implementation partners to broker relationships with new users.
- The platform attempts to challenge traditional, inequitable modes of accreditation by weaving together learning and assessment.
- LRNG playlists and badges try to meet local need while being globally recognised.
- Youth voice is fundamental to the success of the platform.

This is the most learner-driven of our case studies: both in terms of the design of overall offer, and of the learner pathways, which are chosen by learners and not fixed or pre-determined.

Despite technology's being centre stage in this innovation, with the platform at the heart of access to new learning opportunities, nevertheless, even here there remains a sensitivity to context and place. Without local organizations, who can relate this work to their own agenda, it cannot function. Nevertheless, this tech-centered approach has meant that there is less of an imperative to design innovative governance arrangements, as the funding comes overwhelmingly from the philanthropic sector.

The new roles emerging from the LRNG ecosystem are very interesting in that they include experts who are not professional educators; they make their expertise available to learners in a direct unmediated way. This is radical: it makes live the notion that education is, or should be, everybody's business. It raises issues of quality assurance certainly. But it unlocks the resources of communities in exactly the way that is needed. The question is how these roles and routes can align more powerfully with the conventional educational institutions.

Finally, LRNG is at the forefront of developing approaches to assessment and badging that are of global significance. Their strengths are apparent as a key enabler and recognition of learning, with the potential to unlock both other learning experiences and, directly, internships and jobs. LRNG is a key testing ground for the development.



### 3. Kuopio Cultural Pathways, Finland

Bringing the culture of a city into learning



#### The ecosystem at a glance

##### What is the learning ecosystem?

The Kuopio Cultural Pathways aim to bring culture into the curriculum of individual subjects and larger subject areas in various grades of schooling, focusing on socialisation, cultural identity, media and responsibility for nature, environment and sustainable development. The core learning aim is that students learn as members of a community and expresses themselves freely and creatively.

##### When was it established?

The Kuopio Culture Path Program originated in a three-year project in 2005 funded by the city of Kuopio and the Finnish National Board of Education (FNBE). The project ended in 2009, but the Paths have become an integral part of the schools' and cultural institutions' everyday operations.

##### To what extent has it scaled?

The Culture Path is the basis of the city's Culture Education Plan and is for all students in comprehensive schools in Kuopio.

## Overview

The Culture Paths are targeted at students aged seven to 16. The program was designed to better familiarize young people with the cultural life of Kuopio, and to help schools and the city provide for their physical, social and spiritual well-being. The paths aim to enhance the social, emotional, and physical well-being of the children through culture and art, by ensuring that every student has access to the city's cultural services.

### This is realised through:

- Practical tools for teachers to implement goal-oriented cultural education
- Strengthening the cooperation between schools and cultural institutions, supporting the development of schools as cultural communities.

There are nine 'paths' covering art, music and other cultural fields, with each path designed for the needs and curriculum objectives of a particular grade level, within and across different subjects. A path involves local institutions such as libraries, museums or galleries, and includes at least one cultural visit such as to the theatre or an exhibition, with options for many more. Each year, students in a year group 'trek' along a cultural path together. In the final year, students trek a personally chosen path. After eight years on the Culture Paths, ninth graders can use the city's cultural services for free with a K9-card.

**Each year, school students visit at least one arts institution or become acquainted with culture by art workshops at school, led by artists:**

**1st grade:** Library, workshops

**2nd grade:** Art Museum

**3rd grade:** Museums

**4th grade:** Media: photography, movie

**5th grade:** Environment: natural, cultural, workshops

**6th grade:** Dance, workshops

**7th grade:** Music, Kuopio City Orchestra, Kuopio Conservatory workshop

**8th grade:** Theatre, workshops

**9th grade:** K9-card, independent use of cultural services

## Key features

### Initial training for teachers

In the initial years of the program, specialized training was provided to help familiarize a core body of teachers with the Cultural Paths, and an ever growing body of practical tools continue to support the activities structured around the paths.

### Culture Couriers and Coordinators

Every school has its own Culture Courier: a person who acts as a point of contact between schools and cultural facilities. In its original form, the Culture Path program Coordinator would coordinate the program in interaction and cooperation with the teachers, cultural facilities and the educational services of the city of Kuopio. These new roles provided the connections for formal negotiations and agreements between schools and arts and cultural institutions.

### Innovative learning materials

The initial program produced and provided innovative learning materials for teachers who are being inducted to the Cultural Paths. It gave teachers tools and practical examples for goal-oriented cultural education that emphasizes experiencing, creativity, comprehensiveness and multi-sensory activities. The program also emphasizes social interaction and understanding between people. Cultural institutions have also established new education materials and workshops for students, all of which can be borrowed by schools.

### A gateway to broader cultural and arts offers

The Cultural Pathways are often just one educational experience offered by cultural and arts institutions in the city. For instance, the Museum Path is just one part of the museum education. Through it, all pupils in Kuopio can explore the learning opportunities in Kuopio Museum, giving them an excellent overview of cultural organisations and events the city has to offer.

### Integrating curriculum through culture and the arts

The Cultural Pathways break the limits between school lessons and subjects, outside the routines of school. Museums and theatres design activities around curricula from various perspectives and in different ways, while introducing real-world issues. For instance, the Kuopio Natural History Museum organizes environmental education activities like nature excursions or lectures in schools beyond the Cultural Pathways. Other examples include the 'Thank you for Friendship' project, a model focused on preventing bullying, involving a participatory drama workshop. The emphasis is on promoting communication and relationship skills as well as empathy, self-esteem, interaction, and recognition of emotions. The method is exploratory, humanistic, and hermeneutical.

*"We should have more classes about social interaction and communication."*

– an eighth-grade student, Theatre Path Program

*"I learnt to cooperate with other people than my friends."*

– an eighth-grade student, Theatre Path Program

## Impact

The Cultural Paths serve 10,000 students in grades 1 to 9.

During 2017 the Kuopio Museum received 35,067 visitors out of about 118,000 city inhabitants; 23,936 of them were free visitors, mostly school children and others under 18 years old. 9,314 of them participated in a guided tour.

*"Organisations like the Kuopio Museum reach almost all nine-year-old pupils in Kuopio every year. It's likely that some classes would not visit the museum without the Cultural Pathways, especially if the school is located far from the city center."*

–JMari Wikholm, Environmental Educator, Kuopio Natural History Museum

## Enabling conditions

### Common vision for humanistic learning

The Culture Paths create settings and places to learn which promote humanistic and constructivist ways of learning. The students are inducted into learning processes which are holistic, active, communal and socio-emotional, and promote critical thinking as well as engagement.

### Repurposing of existing budget pools

The Pathways were funded by the Well being Promotion Services and Educational Services of the city of Kuopio. Additional project funding from the Ministry of Education and Culture is applied annually. Freelance-artists and cultural associations are encouraged to apply for funding to work with students, children and youngsters at schools, 'youth houses' (civic centers for young people) or day care.

### A Culture Education Plan as a basis for new ideas and growth

The Culture Education Plan of Kuopio is a part of the city school curriculum. Local education providers draw up their own curricula for basic education within the framework of the national core curriculum. Kuopio's Culture Education Plan offers a variety of materials and links to promote learning. It explicitly aims to equalize the distribution of cultural services to all students in Kuopio regardless of the school's location, to bring arts and culture close to young residents, and to promote social cohesion and participation. The goal is also to promote active and creative learning environments outside the school.

## Key insights and commentary

The Cultural Pathways, initially a discrete program, were later incorporated into the formal education system and have become the 'new normal'. Key to this have been the high quality of the learning experiences, the careful induction and preparation of teachers, and the availability of high quality tools and resources.

Cultural Couriers are key to connecting the formal education system and the arts and cultural assets around the city.

The Cultural Education Plan provides a clear policy platform for the pathways, as well as other programs and activities between formal and informal education institutions and education providers.

The Cultural Paths regard all the cultural facilities (museums, theatres, churches, etc. including cultural environment) as a complex learning environment.

The Kuopio case study provides an example of a highly effective local learning ecosystem drawing upon the resources of the locality to enhance and enrich the learning opportunities young people access. Whilst it does not explicitly challenge the prevailing paradigm of schooling, it significantly challenges the assumption that formal learning happens routinely only in school.

The particular context and place - location, culture, history - are absolutely central to the program and could not be replicated. The new physical spaces opened up by the pathways give opportunities for a more expansive conception of learning: humanistic, active, constructivist, real-world.

The governance and funding is such that the 'initiative' is now normalized; it is how things are done. Whilst catalytic funding came from the municipality, a coalition of funding has come into being as the value of the approach is recognized. Governance remains with the city, whilst schools have the space to fashion it to their needs.



The work shows clearly how, even in non-disruptive examples such as this, new roles and skill sets are essential; the program could not function effectively without the Culture Couriers and their successors. They are somewhat similar to the 'creative agents' established as part of the Creative Partnerships program in the UK (Creative Partnerships, 2002), which perished as a result of funding cuts. The bridging of different sectors and cultures requires the engagement of different kinds of professionals, who understand the various constituencies effectively.

With the inclusive and enlightened approach to assessment that is a feature of Finnish schooling, this program has not moved to innovate in that area. Instead, it aligns the learning which takes place on the 'treks' to the existing framework of the curriculum objectives of each grade level.

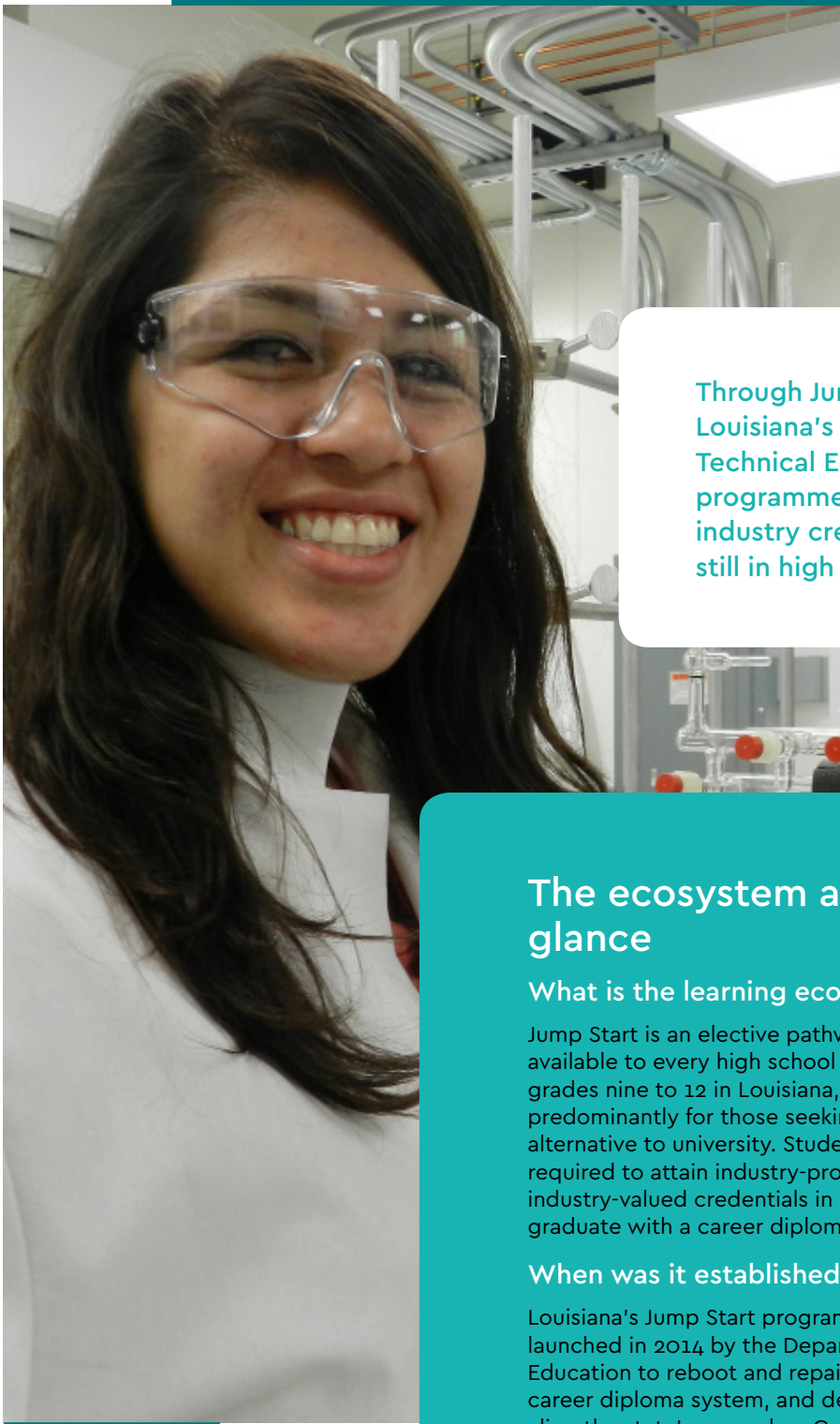
Perhaps what is most striking is how a common vision about the value of cultural and creative learning provides the glue binding a variety of sectors together to a common end.







## 4. Jump Start, Louisiana, USA



Through Jump Start, Louisiana's Career and Technical Education programme, students earn industry credentials while still in high school.

### The ecosystem at a glance

#### What is the learning ecosystem?

Jump Start is an elective pathway available to every high school student in grades nine to 12 in Louisiana, intended predominantly for those seeking an alternative to university. Students are required to attain industry-promulgated, industry-valued credentials in order to graduate with a career diploma.

#### When was it established?

Louisiana's Jump Start program was launched in 2014 by the Department of Education to reboot and repair the state's career diploma system, and deliberately align the state's secondary Career and Technical Education (CTE) strategy with its economic development work.

#### To what extent has it scaled?

Some 30,000 students across Louisiana are enrolled with Jump Start. Jump Start established a four-year implementation plan, with complete state-wide implementation set for 2017 to 2018.

## Overview

As Louisiana's innovative Career and Technical Education (CTE) program, Jump Start links schools with partners in high demand industries to prepare students to continue their education after high school while earning certifications in high-wage career sectors in their hometown industries, and beyond. Schools receive the same accountability grade credit for preparing students for careers in high-demand job sectors as they do for students who achieve top academic honors.

The typical student engaging in Jump Start is a lower performing student than the state wide average, but racially representative. Students take a series of nine Jump Start units; these are a sequence of vocational classes and workplace experiences in a high-demand industry. Participation earns the student a recognized credential or certification that awards them industry-based credentials and/or credit towards post-secondary or college completion.

In 2014, the work on implementation began with the formation of regional teams who established the appropriate graduation pathways to implement. Once those pathways were chosen, districts were given two years to build their instructional capacity and ensure that CTE instructors obtained the necessary credentials. Throughout implementation, the state provided guidance, resources, and tools through its Louisiana Believes website, but the work at the regional and local level was driven forward by the cross-sector regional teams.

Jump Start pathways are approved by the Louisiana Board of Elementary and Secondary Education (BESE), based on the recommendations of regional teams of educators and industry stakeholders, and with the input of the Louisiana Department of Education (LDOE).

*“The ultimate goal is to allow kids to move on and continue their life on a path of prosperity. Every student should graduate high school with a pathway straight to the middle class and the American dream. They should be able to go into the workplace, go into community college and go to university. There’s not one path that’s right for every student, but every student has to have a path coming out of high school”*

-John White, Louisiana State Superintendent of Education

## Key features

### An equitable pathway for students attending or not attending university

A primary benefit of Jump Start is that students who are not enrolling in university are not excluded from the program. At the same time, 'career graduates' who have been through Jump Start may also complete both sets of requirements as there are many Jump Start pathways that are specifically designed for university bound students. High schools are rewarded in the state letter grade system for successful graduates just as they are for graduates with college preparatory diplomas.

### Learning takes place outside of the classroom

Courses are not likely to be taught in a traditional classroom but applied in hospitals, outdoor settings, business premises, or other types of multidisciplinary setting. One of the aims of the courses is to provide a more relevant, connected experience to students in line with what they would like to do following high school.

### Opportunity for new intermediary roles

Jump Start endorse the importance of local intermediaries' operating at the community level between industry and school. There are a variety of intermediaries that fill various functions in different areas of Jump Start implementation. For example, there is a team of intermediaries with a focus on providing Louisiana students with a variety of onsite and virtual workplace-based learning (WBL).

### New roles for school staff

Schools are required to keep up to date with the number of pathways added to Jump Start's website; these are uploaded and updated regularly. At the same time, teachers are expected to establish business and industry advisory committees to stay up to date with the latest certifications and industry requirements in order for them to provide students with meaningful career advice.

## Impact

Since its inception, the state has approved (through a cross-agency review panel that includes the Louisiana Workforce Commission, Louisiana Economic Development and the Department of Education) 47 graduation pathways that span multiple fields, and culminates in a career diploma.

Approximately 8,400 Louisiana students graduated in May, 2018 with a Jump Start career diploma.

*“Jump Start was developed as part of a new way of thinking about academic policy making. New policies need to inspire, be durable and build movements.”*

John White, Louisiana State Superintendent of Education

## Enabling conditions

### Employers motivated to play a bigger, more meaningful role in the community

Larger industry partners have been quick to see the benefits of Jump Start and are given a serious voice in terms of what defines excellence; they are one of the teams which approves Jump Start pathways. Students are also more convinced by business and industry leaders as they are keen to hear from those with lived experience of working in industries they are curious about. For smaller businesses who may not have the human capital or resources to go out into the community and engage with schools, Jump Start are able to provide grants for smaller programs that focus on the entrepreneurial spirit and the micro enterprise credential, essential to this smaller business community.

### Move people beyond thinking that the curriculum is the only ingredient for success

Both schools and businesses have had to shift their mindset from seeing university as the only route to success to recognizing the right of all young people having an equal opportunity to prepare for life post high school. Parents' perceptions of university as being the only route to success for their children was also contested. To overcome this, schools have had to work closely with parents to educate them about Jump Start and its benefits.

### New expectations for high school students and implications for school

Students themselves have had to adjust to a new way of working both in school and outside of school. As part of Jump Start, students are exposed to working collaboratively with students from neighboring schools, project based learning and experience of failure as part of the iterative process. Schools have had to change their school culture to instil values and behaviors that serve as a basis for post-secondary training or employment expectations upon graduation, for example, becoming a trustworthy, independent learner.

## Key insights and commentary

- There is a need for local intermediaries at a community level to support schools.
- A parity of esteem: young people who wish to pursue routes to university or vocational training are entitled to select Jump Start as a graduation pathway.
- Mindsets need to shift from the fixation of curriculum as the sole ingredient for success. Instead, emphasis should be placed on having a strong understanding of the importance of non-cognitive skills.
- Businesses are expected to play a more meaningful role in the community.

At first glance Jump Start might seem to be an ambitious state-led curriculum innovation, and of course it is that. Governance and funding are clearly provided by the state, and assessment is formal in spite of the huge achievement implied in moving towards parity of esteem with academic pathways.

However, the implementation of the reform has been conducted in such a way as to forge fundamentally new relationships and cast existing players, such as businesses, into new roles in relation to learning. Learners engage with diverse experiences delivered by a wide range of organizations and in a wide range of settings outside of school. As State Superintendent for Education John White says, this is policy making as movement building.

By established cross-sector regional teams and enabling them to drive the reform, there is potential for a real shift in the relationship of businesses to learning. Not only do learner pathways become more diverse, the whole system becomes more dynamic and potentially responsive to changing conditions. It remains to be seen whether the Jump Start system catalyzes further shifts to more dynamism in these relationships in Louisiana.







## 5. Swinburne University of Technology, Melbourne, Australia

An ecosystem where every student has a professional purpose.



### The ecosystem at a glance

#### What is the learning ecosystem?

Swinburne University of Technology work with industry and community partners (such as Siemens and the Australian Synchrotron), primary and secondary schools, and the Australian government to provide enriching STEM learning programs as part of a pilot ecosystem designed to raise awareness of STEM disciplines. To better support lifelong learning, Swinburne are investing heavily in building a dynamic, interactive, career management platform to connect groups across the ecosystem and allow users to meaningfully develop their own unique 'professional purpose', informed by real-time market data.

#### When was it established?

In 2017, Swinburne launched its 2025 Strategic Plan articulating the university's commitment to transform education through strong industry engagement, social inclusion, a desire to innovate and create positive change. The pilot for the career management platform is underway, due to be implemented in 2019.

#### To what extent has it scaled?

400 schools engaged in STEM school engagement programs

38,790 school students engaged in STEM school engagement programs

116 Swinburne students engaged in STEM school engagement programs



## Overview

Swinburne are in the process of building a digital career management platform to harness this mindset and connect networks from various communities -alumni, school, industry, community, government, and university- to interact throughout a continuous learning journey.

Swinburne's curriculum, student-centered course design, learning environment and co-curricular activities are designed to align student knowledge, skills, attitudes and capabilities that will be needed for the future world of work. Educators will need to play a new role working in partnership with students to engage them in authentic learning through exposure to global and diverse professional contexts.

Swinburne's 2025 Strategic Plan (Swinburne University of Technology, 2017) has a goal of developing future-ready learners: students who are confident, enterprising and adaptive, and equipped for careers of the future. The student learning experience forms the centerpiece of this plan. Underpinning future-ready learners is a new set of graduate attributes, comprising three components:

1. Professional skills are the baseline requirement for graduates to secure and maintain a job, whether as an employee or a business owner.
2. Self-directed learning requires students to take personal responsibility and become motivated lifelong learners, allowing them to adapt to the pace of change in the world and workplace.
3. Future-ready skills describe the competencies of Swinburne graduates that allow them to make meaningful social and economic contributions in global professional contexts and in their communities.

The graduate attributes and their components will enable students to develop a 'professional purpose' mindset to navigate the changing nature of work and a more meaningful professional life.

## Key features

### Aligning with national priorities to encourage STEM engagement

Swinburne strategically align their programs with the government's wider STEM strategy. This allows the university to respond to national priorities that prepare young people and their partners to meet the demand. In an Australian first, Swinburne and Haileybury Secondary School launched a science experiment into space (Shine in Space, 2018), in line with the opening of the nation's first space agency. Similarly, Swinburne are engaged in state and federal government programs to shape policy decisions that feed knowledge into the ecosystem and tertiary education in Australia more generally.

### Supporting teachers to take a facilitative approach

Swinburne's STEM ecosystem offers extensive enrichment programs which build into the comprehensive process of schools. Programs connect schools, communities and industry, engaging students on multiple fronts. For connections between these groups to flourish, schools need to develop a trusting relationship with partners, like Swinburne, in providing the right support required for effectively running the programs. Swinburne support teachers to practice facilitation skills that broker new relationships with universities, community organizations and industry that provide their students with the skills, such as creativity and problem solving, and behaviors needed to make a meaningful and positive contribution to society.

## Breaking down barriers between university and school students

In many of its programs, Swinburne students play a coach or mentor role to school students. These new relationships are important for providing school students with career advice about different learning pathways that allow them to unlock opportunities they wouldn't have been exposed to in a typical school setting.

## Investing in a dynamic career management platform

Swinburne's vision for creating a 'Professional Purpose Mindset' will be underpinned by a career management platform. The platform will feature a range of services for students in school, university and beyond as they start their careers. These include real-time market data detailing change in market and in demand roles, advice on how to create roles by having various types of skills, and a career advisory service that speaks to individual passions and interests. The platform will allow users to upload their CV and examples of learning to an e-portfolio showcasing skills and abilities. The arrival of the digital platform will allow Swinburne to create system-based metrics, collecting both qualitative and quantitative elements. In the long term, the platform will have a micro credentialing function where students can collect accredited digital badges that will showcase their competencies to higher education providers and employers.

## Impact

Swinburne are in the process of pulling together the programmatic strands of the ecosystem to think about what the shared goals are, how to evaluate the effectiveness of the programs, and evaluate the learners themselves.

Following the success of the pilot, Swinburne is extending its STEM ecosystem to all other areas of the university, which is drawn together by a common focus on science, technology, arts, law, business, and innovation.

The Swinburne and Haileybury space experiment partnership has caught the attention of other school departments due to the impact it's had on teaching students how to draw on each other's strengths as part of a team, and building a resilient and flexible mindset through trial and error.

The school engagement program 'Robocats' (Melbourne Robocats, 2014), a girls robotics club, developed students' confidence in their own abilities to practice learning outside of the formal school environment. Many of the girls involved were inspired to pursue further STEM learning pathways.

*“Working with people in industry triggered a sense of maturity and a desire to learn more. I felt better prepared for university and my future career because of the exposure I had to industry during high school. Once I started Swinburne University, I had the opportunity to give back and engage with industry and secondary school students.”*

Thirumagal Arunachalam Elanthendral,  
Swinburne student

## Enabling conditions

### Understanding the need

Swinburne works with school staff, industry and government to develop and sustain its ecosystem. The university engages with schools to understand the areas teachers and students require support in STEM subjects. This open dialog between university and school informs the design of programs and is key for underpinning school values, essential for gaining buy-in from parents, teachers and principals.

### Buy-in from parents and great leadership

Committed parents are essential gatekeepers to success of the programs; real world learning often demands late night pick-ups, students having to work through school holidays, and trust in institutions external to the school. Inspirational principals are equally important for the successful running of school-led programs. Teachers often require additional support such as time and funding when building relationships outside of school.

### Inspiring the next generation of STEM experts

From a programmatic level, Swinburne undergraduates and industry experts who partner with schools need to convey a sense of passion and drive, required to uplift the next generation of learners and engage them in authentic learning. Exposure to positive, enriching learning experiences equip students with a greater understanding of professional life. They become more self-aware and socially aware of personal interests, and feel empowered to pursue pathways that are most meaningful to them.

## Key insights and commentary

Professors, secondary school teachers, industry partners and graduates are seen as assets and have different roles (e.g., graduates mentor secondary school students).

STEM enrichment programs equip secondary school teachers and students with new skills such as, respectively, facilitation, and skills relevant for the world of work like problem solving, both inside and outside of the formal school environment.

Swinburne govern their own programs to ensure that they strategically align with Australia's wider STEM strategy.

Swinburne has taken a top-down and bottom-up approach to develop its high performing local learning ecosystem.

Swinburne's ecosystem is exactly that: Swinburne's, and so its context is inevitably focussed on constituencies, both global and local, of the university itself. Relationships with predominantly Melbourne schools and the alignment with national STEM strategies enables the kinds of connections that higher education institutions are perhaps uniquely well placed to achieve. The 'top-down and bottom-up' approach enables responsiveness to schools as well as the wider economic context of Australia - a potentially powerful mix.

The new roles enabled by Swinburne's approach are valuable in that they are new formulations of existing roles. The graduate mentors for example draw on existing assets (the alumni of the university), and put them to new uses (mentoring secondary students), to mutual benefit. This starts to speak to one of the less often talked about benefits of learning ecosystems: that community assets outside of formal learning institutions are mobilized and utilized in new ways to increase the total benefit to learners. No resource is left untapped.

Although the goal of preparing future-ready learners is clear, bold and innovative with programs to match, the task of how to assess and accredit the identified attributes is only just beginning. Given the dominance of higher education requirements and credentialing over other education and employment pathways this will be an interesting development to watch.







## 6. The Metropolitan Regional Career and Technical Center, Rhode Island, USA

A school where learning through interests involves the whole community.



### The ecosystem at a glance

#### What is the learning ecosystem?

The Metropolitan Regional Career and Technical Center ('The Met') is an innovative school design that recognizes the virtues of ecosystemic ways of working. Over the past 20 years, The Met has developed a sophisticated practice for working together with its community in Providence, Rhode Island, to reimagine and reshape education. The Met provides real world, interest-led learning pathways by engaging mentors from the community, mobilizing local businesses and building partnerships with further and higher education institutions. It operates a personalized learning design that allows each learner to pursue their passions and interests, in line with an individual learning plan negotiated between teacher, parent or carer, and learner.

#### When was it established?

'The Met' School in Rhode Island was founded in 1996 by innovators Dennis Littky and Elliot Washor, two educators who had been given a mandate by the Rhode Island Commissioner of Education to create a "school for the twenty-first century" that would involve "hands and minds".

#### To what extent has it scaled?

While the Met School is only a small high school of 875 students, the Big Picture Learning design it established has scaled to over 65 Big Picture network schools in the United States and over a hundred around the world. Schools in Australia, the Netherlands, Italy, Canada, India, Kenya, Barbados, Belize, and New Zealand utilise the BPL design.

## Overview

The 'Met' is the founding flagship of the Big Picture Learning network. The Big Picture Learning design connects learning to the real world. Students are supported to find their passions, and are placed under the tutelage of mentors in the community who share those interests and passions. They pursue real work, ventures and projects that have a consequence in the world, are assessed not on the basis of standardized tests, but on how they perform in the situations they are in at exhibitions and demonstrations of achievement, on motivation, and on the habits of mind, hand, and heart. Over time, The Met has built an ecosystem of local organizations and community members deeply involved in supporting the learning of students at the school through internships, projects, and opportunities after leaving school.

## Key features

### Personalised learning, one student at a time

Every student's work is documented on an individual Learning Plan created and updated each marking period with the learning team (the student, parent, advisor, and whenever possible, a mentor) in a Learning Plan meeting. The learning experience of a student is based on a student's individual interests, talents, and needs. Students are encouraged to pursue their interests and grow academically, and are given credit for activities outside of the school day and the school year. The school is competency based assessing students anywhere, anytime and focus on the many ways students learn visually, tactically, through imitation, and, of course, texts and work back at school. The one student at a time strategy expands beyond "academic" work and involves looking at a student holistically.

### Learning through interest-led internships

For two days a week, learners connect with the community and gain real world experience by working alongside mentors with whom they share a passion and interest. Placements, ranging from city halls to the local skateboarding shop, involve extensive work in projects and ventures that have authentic value for the student in the real world, as well as for their studies. Internships are supported by an Internship Coordinator and the Advisor who together help to source, administer and design internships. The students complete authentic work that benefits the student and the mentor through deep investigations. Through this work, students develop twenty-first century skills, real world certifications, build adult relationships, and begin establishing a professional network where people outside of school can validate who the students are and what they know.

## Evaluation through real world standards

There are high expectations for each student at Big Picture Schools. The criteria of assessment are individualized to the student and the real-world standards of a authentic work (as gauged by the mentor). Students engaged in this process at The Met are not assessed by tests and are usually given narrative assessments along with, or in place of, grades. The assessments at The Met include public exhibitions (one per marking period) that track growth, progress, and quality work in the Learning Plan and academic depth in the Learning Goals), weekly check-in meetings with advisors, weekly journals, yearly presentation portfolios, and transcripts (to translate the information in a way colleges can understand). In addition, students develop interests for learning through taking college classes, online courses, pursuing pathways towards certifications, one-to-one tutoring and courses taught in small classes at the school.

## Post-Secondary Planning

The Met shows deep faith in all students and works to make two- and four-year college an opportunity, and to provide other life options. Advisors, staff, and school leaders plan backwards to maximize these opportunities; they develop challenging individual Learning Plans, take students on visits to colleges, educate families about the post-secondary planning process, and build relationships with local colleges. All students must take college entrance exams and apply to college or post-secondary school programs. In addition, The Met continues to follow and support students even when they become alumni. No matter what their chosen course, The Met requires all students to develop post-high school plans that contribute to the future success of the student, whether through college, technical grades, a professional internship, travel, trade school, the military, or the workforce.

## Impact

The Met was number one in every area surveyed by the Rhode Island Department of Education in 2017:

- It was the highest-ranking high school in the state for school Teacher-Student relationships (how strong the social connection is between teachers and students within and beyond school) -30 percent higher than the state average.
- It ranked number one high school in the state for school engagement (how attentive and invested students are in school) -29 percent higher than the state average.
- It was the highest-ranking high school in the state for rigorous expectations (how much students feel that their teachers hold them to high expectations around effort, understanding, persistence, and performance) - -16 percent higher than the state average.

According to the ImBlaze platform, which supports internships across 44 schools in and outside the Big Picture network, 2,732 active internships are underway.

Since its first graduating class in 2000, The MET's College Transition Team has helped maintain a 98 percent college acceptance rate by guiding the students through the college admission process and fostering relationships with colleges and universities. In a 2006 survey, approximately 78 percent of Met alumni who enrolled in college were either still there or had graduated, remarkable considering that most are first generation college-goers.

Across the Big Picture Learning network, 95 to 100 percent of students are accepted into two- or four-year colleges, with 70 to 97 percent heading to college each year (since 2006). Of those students who went straight to work after graduation, 74 percent secured employment through their BPL internship.

*“We learn best when we care about what we are doing, when we have choices. We learn best when the work has meaning to us, when it matters. We learn best when the work we are doing is real and relevant.”*

Dennis Littky, Founding Head Teacher,  
The MET School



## Enabling conditions

### Public-Private Partnerships

The Met School began as a public partnership among the following: the Rhode Island Department of Employment and the Training Human Resources Investment Council (RIDE), The Annenberg Institute, the CVS Corporation (then the Melville Corporation), and The Big Picture Company, and an NGO formed by Littky and Washor. As co-directors, Littky and Washor merged their national reputations for successful educational innovation with a staff of creative and passionate reformers and a board of directors that included both national education leaders and prominent Rhode Island business professionals.

### Parent-family engagement and adult support

Parents and families are an essential element of The Met. Families are engaged around their children through initial home visits, and by participating in Learning Plan meetings and exhibitions. Families share knowledge about their children, support the school community by suggesting mentoring possibilities, and use their assets in ways that support the school. They play an active role in the school community that includes political issues, social gatherings, and supporting new parents and students.

### Ongoing strategic investment

In 1999, Tom Vander Ark, then Education Director of The Bill & Melinda Gates Foundation, visited The Met and awarded Littky and Washor \$4 million (USD) to create 12 Big Picture schools nationally. Gates subsequently awarded the organization grants to start a total of 54 Met schools. In 2003, The Gates Foundation awarded a \$4.9 million grant to The Big Picture Company to spearhead the Alternative High School Initiative, a group of ten youth development organizations that will generate and sustain a total of 322 schools over five years. Also in 2003, the Rhode Island Board of Regents issued new high school regulations declaring that by the spring of 2004 every public high school in the state would submit a plan to enact these policies. These new requirements come straight from The Met's design and include an advisory system, internships, individual learning plans, senior exhibitions, and portfolios.

## Key insights and commentary

- The Met School reaches meaningfully into the community by enrolling families and community mentors in supporting the learning of each individual learner.
- The Public partnership between the local department of education, business leaders and education innovators helped to set up the school, and set a tone for ways of working moving forward.
- Although in many ways challenging the ideas of what 'schooling' should be, nevertheless The Met is highly successful on conventional metrics, with very high proportions of its graduates entering or graduating from college.
- The radical personalization and real world learning The Met provides would be impossible without its grounding in an extended ecosystem of providers and partners.

The influence of The Met should not be judged entirely by the number of Big Picture Schools (the network of which it is the founding member) which have now been established, nor by the extent to which it has influenced the policy direction of Rhode Island's system. It has been influential across the world, with many 'Big Picture inspired' schools adopting its outlook of distributed learning across many locations, multiple partners in delivering various types of learning, and the scope for personalizing the offer to learners. But the ecosystem of numerous businesses, civic organizations, charities, as well as other education providers, is what turns the vision into reality.

The context and place of Rhode Island are leveraged to the full. The Met now has the advantage of many years of building relationships, most especially for the delivery of its internships, and the expertise required to sustain and develop these relationships, through new roles such as Internship Coordinators and Advisors which other organizations lack.

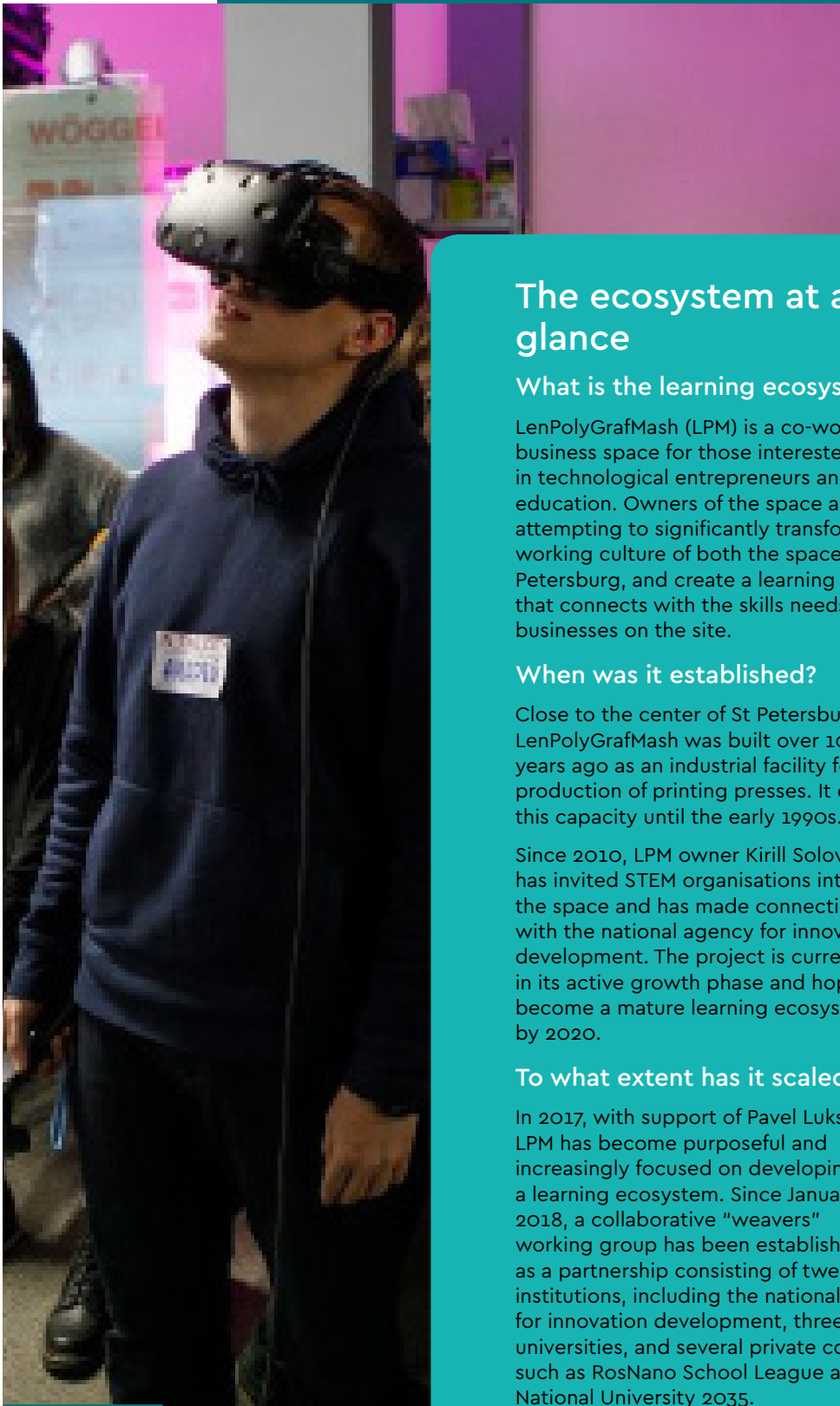
Funding by philanthropy has been catalytic and supportive, but the school operates solely on the budget provided by the state of Rhode Island. It should be noted that it was a visionary state official, Commissioner Peter McWalters, who mandated the school to develop its innovative vision.





## 7. LenPolyGrafMash, St Petersburg, Russia

Prototyping an ecosystemic way of working in a highly localised physical space.



### The ecosystem at a glance

#### What is the learning ecosystem?

LenPolyGrafMash (LPM) is a co-working business space for those interested in technological entrepreneurs and education. Owners of the space are attempting to significantly transform the working culture of both the space and St Petersburg, and create a learning offer that connects with the skills needs of the businesses on the site.

#### When was it established?

Close to the center of St Petersburg, LenPolyGrafMash was built over 100 years ago as an industrial facility for the production of printing presses. It existed in this capacity until the early 1990s.

Since 2010, LPM owner Kirill Soloveychik has invited STEM organisations into the space and has made connections with the national agency for innovation development. The project is currently in its active growth phase and hopes to become a mature learning ecosystem by 2020.

#### To what extent has it scaled?

In 2017, with support of Pavel Luksha, LPM has become purposeful and increasingly focused on developing a learning ecosystem. Since January 2018, a collaborative "weavers" working group has been established as a partnership consisting of twelve institutions, including the national agency for innovation development, three universities, and several private companies such as RosNano School League and National University 2035.

## Overview

Today, the majority of the LenPolyGrafMash (LPM) space is used as a whole-system prototype to connect innovators in engineering, academia, and businesses, including incubators. The long term ambition of the building owner, Kirill Soloveychik, 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.

LenPolyGrafMash'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.

While there are little to no relationships with schools, extra curricular education providers and universities are beginning to 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.

If successful, LenPolyGrafMash will become the first prototype of tech-oriented learning ecosystems across Russia and the former Soviet Union.

## Key features

### Being open to a shift in traditional working culture

The owner of the space and ecosystem thought leaders should know that mindsets need to shift towards a new, ecosystemic and shared way of working before new skills can be developed. They have convened schools, universities, and industry to map the experience of an ecosystem life cycle spanning from school to adult education, in an attempt to encourage groups to organically harness and nurture partnerships with one another, without guidance. There is some way to go before groups to shift their focus away from their own level of operation and embrace this new way of working.

## Connecting different working communities

The role of the building's owner has somewhat shifted from leasing spaces to taking responsibility for connecting groups with one another. In order to do this effectively, a systemic way of thinking is required, in addition to a proficiency in communication, coordination and the ability to energize different audiences.

## Funding and income streams

The funding mix of the project currently comprises funding from Soloveychik's printing business, St Petersburg, and federal funding primarily from universities and Bortnik Foundations grants. Currently, most funding from city and national sources is focused on creating infrastructure opportunities for technological innovations.

## Impact

150 companies based in LPM, including ICT, robotics, pharmaceutical, biotech, design, architecture, and fashion sectors (2018)

1,500 residents (2018)

1,700 people participating in complementary, adult or K12 school educational programmes at LPM (2018)

50,000 people participating in educational and professional events and hackathons run by the organization 'Boiling Point', based in LPM. Current growth of 1000 people per month (2018)

Over the long term, LenPolyGrafMash want to create more university hackathons that connect to real world challenges facing industry, using industry to support the events. The intention for this approach is to influence universities to enrich curriculums with relevant content and focus, underpinned by industry priorities.



## Enabling conditions

### Events that model ecosystemic ways of working

There is no 'one size fits all' approach as there are many differences among the organizations using the space, such as goals and values. Creating events and activities of interest for various organizations is one of the main strategies for engaging a diverse range of actors. For example, hackathons are effective at connecting the agendas of regional companies with university capabilities, and demonstrating how ecosystemic integration can bring immediate economic and social benefits.

### Using space to cultivate a culture of learning and open collaboration

The LenPolyGrafMash team have spent a considerable time finding players with a demand for technological projects who are prepared to pay for this kind of co-working space. Having all organizations in the same place has the potential to foster a culture of open collaboration that allows for networks to come together informally to share and learn from other businesses and institutions. The team believe this way of working will develop organically over time through participation in workshops or state-endorsed events and competitions.

### Building the knowledge and support of government

The team at LenPolygrafMash are considering how best to use their good connections with the city administration and government to engage them around the opportunities of ecosystemic ways of working. Political backing is essential as funding this kind of project is proving difficult in a Russia where government policies shy away from complex systems in favor of older, industrial ways of working. Typically, projects that receive funding are those with specific outcomes, rather than those with spread outcomes across multiple beneficiaries.

## Key insights and commentary

- Mindsets need to shift before new skills and ways of working can be developed. There currently isn't enough demand in Russia at the moment.
- An intermediary role is required to connect organizations and institutions who are used to working in silos.
- Political support is key to growing public awareness of, and demand for ecosystems.

LenPolyGrafMash is an opportunity to create a geographically hyper-local learning ecosystem, using the co-location of diverse companies to generate learning opportunities. Context is as much about the industry in question (in this case digital technology) as about the locality in which the site is located.

The project has learned that good conditions can be insufficient to stimulate change, and are beginning to explore catalyzing activities and new roles to support those in order to move in the right direction.

Governance and funding being concentrated in the owner and other leaders creates opportunities to leverage networks in support and risk in the dependence on key individuals.



## 8. Remake Learning, Pittsburgh, Pennsylvania, USA

The connective tissue of a post-industrial, tech-focused local learning ecosystem



### The ecosystem at a glance

#### What is the learning ecosystem?

A collective of individuals and organizations in Western Pennsylvania are working alongside public school systems to ignite engaging, relevant, and equitable learning practices. This local learning ecosystem, anchored in the city of Pittsburgh, supports learners of school age to gain learning experiences that respond to technological and societal change in a post-industrial city in the rust belt of the United States.

#### When was it established?

Remake Learning was established in 2007.

#### To what extent has it scaled?

The Remake Learning network consists of more than 500 organizations in the region, with 137 school districts, as well as museums, libraries, other out-of-school education non-profits, philanthropies, government bodies, industry partners large and small, and startups in the education space. It has trained over 5,300 educators (formal and non-formal) in innovative teaching methods, and has granted \$70 million (USD) philanthropic support to local learning innovation.

## Overview

Remake Learning is the connective tissue between the broad group of stakeholders that drives this ecosystem, making sure that novel and interesting partnerships are being made in order to further innovative learning experiences. They seek to collectively 'remake learning' in order to best serve this generation and generations to come. Their vision is a future in which the creative members of Remake Learning support each other to ensure that learning is engaging, relevant, and equitable across projects, organizations, and programs in the greater Pittsburgh region. Their vision is, further, that learning practices and environments will:

- Activate skills in critical thinking, problem-solving, creativity, communication, and collaboration so that learners are prepared for an increasingly technology-driven future. Learners are empowered to identify and solve problems that affect themselves and their communities; to fail, retry, and learn from mistakes; to express their creativity in authentic ways; and to both struggle and have fun.
- Challenge learners to question, examine, and dissect social systems; to develop the confidence to address and deconstruct inequalities; and to construct a more just and equitable world.
- Connect all the places learners live, work, and play, including schools, libraries, museums, parks, clubs, community centers, centers of faith, at home, and online.
- Encourage learners to explore and play and support them to follow their curiosity using varied tools (including, but not limited to, technologies).
- Derive deep and caring relationships between learners and their families, peers, educators, and mentors.
- Connect learners to their communities and, in an interconnected world, help learners develop cross-cultural understandings that unlock opportunities to thrive both within and beyond their own communities.

*“As a high school student, one of the most important things to me is being able to make connections. Remake Learning connects a wide range of programs that offer accessible platforms in my own city. Without opportunities like these, I never would have been able to explore where my interests could take me.”*

Zainab Adisa, Student



## Key features

### Fusing with existing system structures

There are 29 intermediate units across the state of Pennsylvania that have traditionally connected school districts to professional development opportunities at a regional and national level. However, in Pittsburgh, new roles have been created to make use of these intermediaries.

### A network as the connective tissue of the ecosystem

Remake Learning provides robust convening support that intentionally invites people from diverse backgrounds and sectors to participate in conversations around the future of learning, get to know each other and build strong human bonds face-to-face. They place emphasis on communication through robust storytelling, blogging, and social media. The network also catalyzes activity by administering mini-grants to foster 'partnership innovation', most recently awarding \$400,000 (USD) in grants to 66 organizations in the region funding innovative teaching and learning.

Remake Learning also coordinates various working groups around themes like STEM, innovative professional development, innovative educational policy, helping to reduce duplication and increase efficiency in a certain subject group across the region. Championing is also a critical aspect of the network, shining a spotlight on the network members at the scale of a whole community, so people come out and experience them. These functions allow Remake Learning to connect people and give them opportunities that they might not have experienced or people they haven't had the opportunity to meet.

### Catalytic funding and partnership incentivisation

There is an emphasis on catalytic funding in the region: funding that demonstrates an ability to plant a seed, with the goal that it will continue to grow beyond its initial success. With this catalytic funding comes an emphasis on strong partnerships, especially for some of the more disenfranchised schools in Pittsburgh. The logic is that these schools are more likely to execute a really great project when they have strong partnerships, so there is a constant emphasis on partnerships, whether that's with industry, or university, or whether it is with other schools.

### Multiple front doors

People find different routes into learning: some through connections and collaborations on STEM, others through computer science, or through 'maker learning', to name a few. These are the front doors by which they engage with the collective vision for engaging, relevant and equitable practice as well as the formal Remake Learning network. This is seen to be a strength in that it allows for inclusivity, and matches the work people are most passionate about and most likely in which to invest 'time, talent and treasure'.

*"I'm learning how to do a lot of things that I wouldn't have ever had the chance to do. It teaches you a lot about teamwork. And it's just a lot of fun."*

Anastasia Snowden, Team Captain, Little Ladybugs All-girls Robotics Team

## Impact

More than 220 makerspaces have been established in the region.

Participation by youth in out-of-school programming across Allegheny County, comprising the Pittsburgh region, is ten percentage points higher than the national average.

The CREATE Lab, a robotics and technology development lab at Carnegie Mellon University, has supported teachers and more than 8,000 students in more than 100 schools across southwestern Pennsylvania and West Virginia in discovering how they can use technology for learning.

More than 900 educators representing 100 districts and providers have participated in summer innovation intensives since 2013.

\$3.1 million (USD) invested by the Sprout Fund to catalyze innovative learning programs, events and experiences since 2009.

*"What you'll find now in Pittsburgh is that it's not at all uncommon for edtech companies to do play-testing and be housed in partnership with museums and libraries here in the region. It's not uncommon for out-of-school and in-school educators to work together and across districts - it happens all the time."*

Sunanna Chand, Director, Remake Learning

## Enabling conditions

### Philanthropic stewardship

The philanthropic environment in Pittsburgh is unusual. Foundations will use their convening power to bring people together around lots of different issues, whether it's Public Health, food access, or the future of learning. The Grable Foundation, an education foundation in Pittsburgh, brought people together around the idea of the future of learning. This philanthropic support not only provided a funding baseline, but also leverages the power of convening. Philanthropists in the region also tend to talk to one another about what they're funding, particularly in the education space, so they are able to align and augment their efforts.

### Strategic leadership and governance arrangements

In recent years there was a clear and strategic response to the post-industrial challenges facing the Pittsburgh education system. The founding participants of Remake Learning were, from the start, inclusive of a diverse cross-sector of people from various industries who were interested in education. Today, the Remake Learning Council - a commission of more than 40 regional leaders from the education, government, business, and civic sectors - guides the work of Remake Learning by providing strategic and symbolic leadership while maintaining the open, accessible structure that has defined our network from the beginning. Last year, the network introduced Remake Learning Ambassadors, an additional governance layer comprised of a network of leaders from key intermediaries but also people in the network who are known to have strong networks of their own.

### Network Stewardship

A small team of Remake Learning staff members and partners provide day-to-day support to network members, coordinate working groups and special initiatives to direct the network's energies, and champion Remake Learning in the regional community and at the state and national level. They believe that no-one organization alone can transform teaching and learning to better serve today's young people, so Remake Learning helps bring them together. They seek to better support educators through a broad network of stakeholders that are thinking about the same types of issues to be able to support learners that have drastically different needs.

### Confronting inequity through participatory, collective action

In the past few years, Remake Learning has made intentional efforts to ensure the network is more diverse, equitable, and inclusive for everybody in the region. They have tried to address this in their recent revision of the mission and vision. The document came from the network itself, and they are the owners of the direction of travel, holding one another and themselves to account. Remake Learning now deliberately avoid the terminology of 'all learners', instead using specific language to explain inequity: opportunity gaps between marginalized populations—students of color, students in poverty, girls in STEM, students with exceptionalities, and rural learners.

## Key insights and commentary

- Collaborative funding and leadership arrangements ensure meaningful, authentic and novel partnerships are built across sectors and providers.
- A proactive and sophisticated network creates a platform for grassroots partnership and collaboration within the existing public sector education system and beyond.
- A unifying vision for learning provides the coherence that allows stakeholders to pursue different agendas and areas of interest within common framework.

Remake Learning inhabits two of the categories of the typology of learning ecosystems suggested at the beginning of this report. It is an 'innovation ecosystem', in that it deliberately sets about creating the conditions that accelerate radical innovation in education innovation (such as new designs for schooling) through the combination of multiple players, policies and platforms. And it has become a local learning ecosystem, in that new providers and new opportunities have become available to learners (in this case at scale), in addition to addressing the need for changes in the nature of conventional schooling.

Its appreciation of, and response to, the context and place are central; recognizing the particular circumstances of the transitioning rust belt region, the challenge and opportunities of new digital industries provided the initiating drive. Moreover, the segregated nature of the location has increasingly come into focus, and the vision and practice of the initiative adjusted to recognize and respond to that challenge.

In addition to the funding catalysts and coalitions which frequently characterize this work, the program has recognized that the wide range of stakeholders needs to be formally acknowledged through governance arrangements that reflect that: the Remake Learning Council. Without statutory authority, the council may guide the activities of the network, but over time it would be interesting to examine the relationship it might develop with the 137 public school districts, as well as the governing bodies of the multiple other members and partners in the network. Re-setting strategic direction, when the degree to which the work was failing to address issues of equity was recognized, was a non-bureaucratic open process, involving a wide constituency.

New roles at the intermediary level (ambassadors) are apparent in this ecosystem; what is less so are emergent new roles at the learner-facing end, for teachers and other educators.



## 9. RSA Cities of Learning, UK

Activating a grassroots, city-based, mass engagement movement around lifelong learning and skills.

### The ecosystem at a glance

#### What is the learning ecosystem?

Cities of Learning (CofL) is a new place-based approach to enhancing lifelong learning through digitally connecting individuals to learning, employment and civic opportunities within a defined locality. The approach is orientated around three key design principles: new civic leadership, mobilizing diverse networks of learning providers, and connecting different learning opportunities via a digital platform.

#### When was it established?

In 2015, the RSA's report 'The New Digital Learning Age' advised that the UK should explore piloting a City of Learning, building on the original work of Collective Shift in the United States and other global initiatives such as UNESCO Learning Cities. In 2017 the RSA and Digitalme collaborated with Greater Manchester, Brighton and Plymouth to test and prototype the Cities of Learning approach, with pilots expected in early 2019.

#### To what extent has it scaled?

The RSA and Digitalme are currently working towards formal piloting with two UK Cities, Plymouth and Brighton. External evaluations from these pilots will be available from Summer 2020.

A parallel pipeline of conversations are underway with other UK and international cities and localities keen to develop and prototype the CofL model. In addition, exploratory conversations are taking place with employers and businesses, Multi Academy Trusts, and other strategic bodies such as Local Enterprise Partnerships, Arts Council, Public Health bodies, and Housing Associations interested in the application of the concept in their own context.

CITIES







## Overview

The Cities of Learning movement originated in the USA. The first CofL grew out of the Chicago Summer of Learning in 2013 (referenced in the LRNG case study), where more than 100 organizations that offered informal learning opportunities joined together to make their programs more visible. Open Badges were used to raise the profile and visibility of these learning opportunities.

The movement mobilizes and amplifies the formal and informal assets and resources in a city in order to close gaps in creativity, opportunity and employment and civic outcomes. It brings together learning, work and civic institutions (schools, colleges, employers, training providers, charities, local authorities, libraries, museums, coding clubs, makerspaces and so on) to form purposeful city-wide networks.

These networks are supported by a digital platform that facilitates the recognition of learning and skill development, and connects learners to a wealth of enrichment experiences and opportunities through digital open badges, which respond to local priorities and labor market needs. Open badges are linked through the platform to form new learning and skills pathways which enable access to previously inaccessible or invisible opportunities for learners.

In the UK, the likely age range of learners during the two pilots is between 14 to 25 years old, however a number of areas are expressing an interest in looking at 16 to 19+ and older adult learners.

## Key features

### Appetite for change and a collaborative approach to working

The model considers cities and localities where significant new leadership potential exists and where existing learning and training provision is highly fragmented and disconnected. One of the goals of CofL in 2018-19 will be to convene place-based networks to map and codify the diversity of learning opportunities on offer and create a digital infrastructure that connects different learning opportunities via digital badge credentialing. In addition, each city will be supported to define a set of aspirational outcomes they want to achieve for their learners, employers, learning and training providers and civic organisations. These outcomes will outline what success looks like for the various groups within the ecosystem, and form the basis of city-wide pilots. Governance structures will be carefully considered as CofL aims to strike the right balance of autonomy between national and city partners, drawing on a hub and spoke type approach, or 'Field Catalyst' model (SSIR).

### Equitable pathways for all citizens, regardless of background

A key requirement for a City of Learning is an inclusive offer where all inhabitants of the city should be able to benefit, including those furthest away from learning and labour markets. One ambition of the model will be to remove stigma or negative perceptions that are often attached to initiatives targeted solely at those communities least advantaged, and instead start with an asset based approach to proactively engage those who would most benefit, in order to close opportunity gaps. Stakeholders are exploring approaches to program design, outreach and overcoming barriers to engagement in learning such as the design of learning experiences, transport infrastructure and cost.

### Badge-based pathways

The digital platform will be underpinned by the concept of a 'skills spine' which forms the basis of badge-based learning pathways, and provides a new and co-created common language for learning and skills progression. Badges can be issued by a range of stakeholders across a city which are linked to opportunities, enabling individuals to discover and pursue badges, and build unique learning pathways. The platform will enable young people and organizations and cities to create and award Open Badges (Open Badges, 2011) to evidence all types of

learning across a city, including formal and informal employability, lifelong learning, civic engagement, knowledge, skills and capabilities. Through Cities of Learning, informal and formal forms of learning can be connected. For example digital badge credentials can link learning that happens in school or college through extracurricular activities such as code clubs or arts activities, to learning that happens during evenings, weekends and holidays, building a rich picture of a learner's interests and capabilities.

### The importance of connecting learning across cities

While learning pathways will be local to an area, connecting cities to share practices and potentially create joint programmes will be vital for building a national movement and inspiring wider system change. Similarly to LRNG, there is a desire to celebrate and share the best of what's happening across cities so that other cities are encouraged to adopt effective programs and new ideas. This comes at a time of regional devolution and Brexit, where UK cities are embarking on shaping their own narratives and identities. Practically sharing will happen through the platform, coordinated support and training from the RSA and Digitalme, and national events.

### Funding model

Currently, there is a mix of national and city based funding for Cities of Learning – bringing together corporate partners, grant funders, and public sector funders to achieve greater impact together. Long term, the financial model is expected to shift over time from a model which is on the whole supported through national funding, to a predominantly city-based model with diverse funding streams.

## Impact

No impact data is yet available for the pilots. Evaluations for Brighton and Plymouth pilots will be published in 2020. The evaluation is likely to focus on four broad outcome areas:

- Participation and engagement in learning.
- Engaging those furthest from the learning and labour market/inclusivity.
- Progression (skill development) and destinations.
- Civic outcomes e.g. public value, sense of place and belonging, wellbeing, relationships/networks.



*“Learners of all ages and backgrounds have hidden skills, talents and interests that often aren’t recognised by the broader education system. Many also lack knowledge about the variety of learning and work opportunities available in their local area, and an understanding about how to access these. Research shows that young people from disadvantaged backgrounds are significantly less likely to have access to a whole range of opportunities to develop the social and cultural capital which helps to drive progression in learning and work (Demos 2015). Cities of Learning aims to connect different learning experiences across localities and places to enable learners to see new pathways to opportunity which may not have been visible to them previously. Digital badges create a new language for learning and skill development, which helps learners identify, develop and articulate their knowledge, skills and capabilities in different contexts. More broadly, Cities of Learning looks to mobilise the potential of place based networks, new forms of civic leadership and new technologies in creating places that value and promote lifelong learning as core to their culture and civic identity.”*

*Rosie Clayton, Associate Director, Cities of Learning*



## Enabling conditions

### The digital platform should be engaging and interest-driven

The digital platform is critical in its initial engagement of users. Through extensive local co-design, the RSA and Digitalme are designing the look, feel and language of the platform. In addition to being aesthetically inviting and engaging, insights from the prototyping phase found that people valued a platform that could provide routes into work and education or training, but wanted the flexibility to forge learning pathways that built on their personal passions and interests.

### Shared, equal partnerships

CofL relies on shared, distributed leadership to achieve scale, systems change and innovation. National and local anchor organizations will work in partnership with influential leaders from across education, business, public services, and the community to inspire a movement for change and collective impact. When convening city stakeholders such as businesses and schools, CofL will encourage groups to develop innovative mindsets that practice new behaviors and collaborative ways of working that are sustained over time. Leaders need to be open to looking beyond their individual institutional priorities as city stakeholders and be encouraged to unite around a shared, common set of goals and language for lifelong learning. If CofL is to be effective, cities need to express value in enhancing citizen's self-efficacy and seeing lifelong learning and civic participation as core to the identity of a place.

### Incentives for use

Engagement with CofL will be driven by learner interests and passions linked to informal and professional pathways. Being open source will mean that all can engage with the program and develop badges. For the learner, there must be value in gaining a badge in order for them to explore a pathway. For instance, a learner might collect three to four different badges that unlock opportunities to a work experience placement or visit of interest. Equally, a voucher to a local coffee shop or cultural institution might provide an attractive incentive. For schools, the platform is attractive for improving career guidance services and offering local partnerships with organizations they didn't have relationships with previously, such as industry. Badges can also be designed to validate subjects or activities across the broader school curriculum that aren't easily evidenced. For employers, supporting the development of local talent who are work ready and have the necessary skills required for industry is a major pull factor.

## Key insights and commentary

- Leaders from different organizations and sectors need to be prepared to seek commonalities across individual institutional priorities and collaborate to establish shared goals and a joint vision for lifelong learning in their locality.
- A mix of local and national funding. Over time, financial models will predominantly become city-led and self-sustaining.
- Organizations and schools are expected to develop innovative mindsets, new behaviors and collaborative ways of working that can be sustained over time. They must be willing to take risks and experiment. They must be open to taking risks and experimenting.
- CofL does not intend to replace formal assessments. Rather it seeks to integrate digital badges and place-based programs into a wider movement that can drive increased engagement, promote more equal access to opportunity and social capital, and cultivate a culture of learning. To some extent, CofL does challenge how existing credentialing works by giving recognition for knowledge, skills and capabilities that aren't currently recognized by formal assessment systems, as well as creating new pathways to opportunity.

Cities of Learning speaks to the critical importance of locality on one hand, while indicating a globally applicable template on the other. Interestingly it focuses only on cities, and only on certain kinds of cities with strong local leadership and anchor organizations that can catalyze and lead the initiative particularly in the early days. This necessarily excludes many places, and it will be interesting to see whether the approach that has led to LRNG in US cities can gain traction in the very different leadership context of cities in England.

CofL in the UK is at a very early stage, yet already its leaders are considering the long term governance and funding implications. They recognize that both funding and governance will look different in the early catalyzing stages (driven by RSA, a national charity) and that over time must shift to increasingly local ownership. This will be a difficult shift to make and one to watch with interest.

Also building off the LRNG experience in the US is sophisticated thinking about how badging and credentialing will work, including how badges have currency for learners beyond their own city context.

# Chapter 6

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Our Findings

## The two research questions informing our investigation of real-world learning ecosystems were:

1. What are the barriers and enablers faced by attempts to create or catalyse learning ecosystems?
2. Do real-world learning ecosystems really represent a new learning paradigm, as described in the literature?

### To answer our first question, we consistently examined four areas in each of the nine case studies.

1. What kinds of governance and funding arrangements are in place? What are the implications for sustainability, diversity, dynamism?
2. What kinds of new roles for people and organizations are required?
3. To what extent are learning ecosystems context and place specific? And are there any implications for scaling as a result?
4. What are the implications and opportunities for assessment? Is there a need for innovation in credentialing and badging?

Our aim was to learn from what has been achieved, the problems that have been overcome, and those that continue to present real challenges to the development of learning ecosystems. We consider what our case studies tell us on each of these in turn and consider the implications and next steps for system and initiative leaders.

## Governance and funding

### What kinds of governance and funding arrangements are in place? What are the implications for sustainability, diversity, dynamism?

It is very clear that for the most part, catalytic funding from sources outside the formal public-funded education system has been vital to the development of the learning ecosystem. The exception to this was Kuopio Cultural Pathways, which received municipal funding at the outset and then, as it grew, developed a broader coalition of funding.

This initiative, however, is located in Finland, known for its atypically open approach to innovation –indeed, having founded its success as a nation upon it. Similarly, Louisiana, now one of the most innovative states in the US, took the lead in funding the Jump Start program to make good on its policy determination to create equity between academic and vocational routes. But Louisiana created a coalition of funding with business to do this. Elsewhere it has been for other funders to support the proof of concept before a wider coalition of funding can be built (cf. Remake Learning).

Financial models will evolve and develop over time, but where other sources are available—such as in the vitality of the philanthropic sector of the US—the learning ecosystem innovation is much more likely to find experimental and developmental space. The evidence base will probably have to increase substantially before more public funds are deployed in this direction.

Perhaps the most fertile space for fundraising will be amongst employers (as with Jump Start), who have become increasingly vociferous about the shortcomings of schooling systems to meet the needs of business and society (Foroohar, 2018; BBC, 2014). It is possible that cities and municipalities will get more

involved as they discern the connection between learning ecosystems and their broader regeneration and cultural goals, as in the case of Learning Cities.

The deployment of the funds that do become available is also interesting. Consistent with the need to remain local, the practice of ecosystems such as LRNG (and Kuopio) to distribute 'central' funds to smaller organizations makes a good scaling strategy.

If ecosystems are to grow and endure, solutions to issues arising around governance will need to be found. By definition, as more—and more diverse—partners populate a learning ecosystem, questions about who controls both its strategic direction and its operational quality become more prominent. Generally, power follows funding. A continuum is apparent between initiatives primarily 'owned' by the state system (Kuopio, Jump Start) and those which are detached from the formal system through to those where formal systems are tangentially involved (LRNG, LenPolyGrafMash). Even in ecosystems owned by the state, as in the case of Jump Start, finding authentic ways to realize joint leadership is important, since without distributed collaborative governance the wider objectives of learning ecosystems are unlikely to be met, relying as they do on discretionary voluntary opt-in. The Remake Learning Council is a good example. For effective governance, and especially for inspirational governance, leaders from different sectors and organizations need to put aside their own organizational priorities and privilege the common good. In effect, they must accept collective responsibility for learners' success.

## New roles

### What kinds of new roles for people and organisations are required?

Many writers (see especially the 'Global Change Leaders' work on 'Weavers') (Wahl, 2018) have recognized the need to rethink existing roles and create new ones when working across organizational and sector boundaries. It is clear that teachers in schools, for example, cannot be expected to hold multiple relationships without support, something that The Met has recognized through use of Internship Coordinators as well as a very different conception of teaching roles. The case studies bear out the hypothesis with a range of new and interesting developments in this regard.

Some initiatives cast non-educators into new roles in support of learning, which changes radically the notion that education is only the business of schools and teachers. LRNG involves experts who are not professional educators, making their expertise available to learners in a direct unmediated way. Swinburne University offers its graduates as mentors at secondary level and Jump Start formalizes the role that business employees play in support of youth learning. These examples throw up questions of quality control and safeguarding of course. On the other hand, The Met demonstrates that over time the use of community members as educators can upskill the wider community in the provision of learning.

Other cases indicate that new roles are essential to broker and facilitate new tled programs such as Kuopio's Culture Couriers and initiatives led from outside schools such as Remake Learning's ambassadors.

## Context and place

### To what extent are learning ecosystems context and place specific? And are there any implications for scaling as a result?

Repeatedly, programs emphasized the context specificity of their work, even where the ambition is to go to great geographical scale (as with LRNG). The relevance and power of new approaches to learning are bound up with their relationship to the historical, cultural, and industrial milieu in which they arise. These can look very different.

For Kuopio Cultural Pathways, concerned with making cultural and creative learning a lived reality for young people in the city, this means that cultural resources (albeit, and always, complemented by the online global reach for expanding horizons) create the design frame for the work. The expanded learning offer reflects the place in which the ecosystem arises or is designed.

Remake Learning, utilizes the post-industrial landscape in Pennsylvania in a strategic way, and connects learning to the new opportunities that arise for example, through maker-spaces. Schools in some localities are often not ready or equipped to deal with the wider changes happening in their communities and in the wider world, as the Educaci360 program has recognised.

New physical spaces are seen as opportunities for rich, various kinds of learning experiences. This insight connects with the multiple strands of work positioning cities as sites, not just of economic regeneration, but also of education innovation (Clayton, 2016; OECD, 2017). This is not to say that some core tools are not available, but actors in the case studies repeatedly stressed the need to be hyper-local (albeit in a digital context), meaning that models cannot simply be replicated across localities.

## Assessment and badging

### What are the implications and opportunities for assessment? Is there a need for innovation in credentialing and badging?

Assessment is a major reinforcer of existing education systems and dominates the relationships among schools, students, parents, higher education and industry. Failure to address, replace, or reinvent models of assessment is probably the single biggest barrier to moving to more diverse ecosystemic approaches in education as a serious challenge to the existing paradigm of education. Not all our case studies have begun to address assessment, nor do all intend to. The case studies presented here that do so grapple with it in two main ways.

One group seek to change existing formal assessment structures to reflect the wider diversity of learning experiences and outcomes afforded by their ecosystemic approaches. Kuopio Culture Paths are embedded in the formal school curriculum and are not assessed separately from other aspects of the curriculum, whereas Jump Start provides an alternative, integrated graduation route separate from high school.

The other groups are putting their faith in digital badges, which are themselves full of promise but as yet are unproven as an alternative route to educational progression and employment. LRNG's model (and that of RSA Cities of Learning once underway) is heavily predicated on the power of digital badges to create a new organizing principle for learning. Badges also offer a form of 'currency' for learners that enables them to evidence their learning in ways that create real opportunities within and beyond the reach of the learning ecosystem itself.

### Some lessons for learning ecosystem pioneers

It is clear from our case studies that any initiative that takes the idea of creating genuinely new ways of organizing learning around ecosystemic principles must grapple with many of the same thorny issues that education reformers have always faced. Issues of how to evidence learning so that multiple stakeholders can interpret the results; of how to define, develop and quality assure professional

and other roles; of how to balance consistency and scale with diversity and localism; and how to ensure sustainable funding while diversifying governance - all are present in the attempts to establish learning ecosystems. These challenges must be taken seriously if learning ecosystems are to gain and maintain a foothold. In light of these, the role of the state or jurisdiction in setting the regulatory framework is important. We have noted the prominence of philanthropy and other actors in initiating learning ecosystems. But there is much scope for public authorities to create the space, incentivise, enable and even catalyse learning ecosystems. They could also create appropriate accountability frameworks for this twenty-first century learning phenomenon, as distinct from one which sees only individual schools as the unit of accountability.

### Do real-world learning ecosystems really represent a new learning paradigm, as described in the literature?

To answer our second research question we draw on insights developed through the nine case studies and our rapid literature review to offer two new frameworks for thinking about learning ecosystems. The frameworks relate to:

- Stages of learning ecosystem development
- Impact of learning ecosystems on existing learning provision

*“Cities of Learning knew that three things are required: local leadership, local network buy in, and a platform to hold it together. Perhaps this is required to catalyse, and then it has to be culture that wraps around and makes it sustainable beyond specific leadership and funding.”*

Rosie Clayton

Ecosystems are by their nature dynamic and evolving. We have taken a snapshot of the case studies at a particular moment in time, and in so doing there is a risk that we view them as overly fixed and divorced from their current stage of development.

We hypothesise four stages through which a learning ecosystem might progress as it develops and grows. Each of these stages implies a different set of risks and opportunities, as well as different degrees of 'tightness' or 'looseness' in their governance and design.

## 1. Hypothesis and visioning

At this stage, initiators of a learning ecosystem may envisage a high degree of dynamism and creativity in the learning ecosystem and focus on creating optimal conditions for learning to emerge. Here, a new vision is paramount, based on insights about the shortcomings of the existing system, and the classic question of the innovator: "What if?"

Questions initiators are likely to be asking at this stage:

- What are the conditions required for learning ecosystems to emerge?
- What are the opportunities and barriers that will help or hinder our vision?

The vision is of a 'loose' arrangement with great potential for a paradigm shift in learning. The risk is that little actually happens. LenPolyGrafMash is a good example of a high potential vision and some very good conditions provided by the physical co-location of multiple potential partners coupled with the vision of leaders. But in terms of behavior change, there is a lack of immediate progress.

## 2. Catalysing and initiating

Here is where initiators are moving from an idea to reality, and designing elements or architecture to catalyze or direct change. This is where new partners are identified; multiple conversations take place about new roles, ways of working, and evolving contributions. This is where debates about the future and nature of learning hit the grounded realities of what is possible and how it might be organized.

Questions likely to be asked at this stage include:

- What new infrastructure, roles or processes are needed to start to change individual behaviour, roles and contributions?
- What technology platform(s) will be needed to support the endeavour?
- What can be resourced and funded?
- How will it be governed? Who is accountable?

Even where the vision is of a 'loose' ecosystem, to create momentum for change some tighter targeted funding and programming is likely to be necessary to achieve change.

The risk is that the tighter governance and programming are difficult to move beyond. A good example is Swinburne who are initiating multiple programs and engaging multiple partners to create change. However, all momentum remains with a single institution.

## 3. Dynamic experimentation

Here more mature learning ecosystems start to respond to the limitations of early catalytic programs; to iterate, try new approaches and assess early evidence of success. Tougher questions start to arise about the progress achieved, and the gap between the vision and reality.

Questions likely to be asked at this stage include:

- Are we reaching all learners, particularly the under-served?
- How well does the ecosystem respond to changing conditions?
- Which elements can scale, and which are context specific?

This phase might result in a greater diversity of partners and programmatic elements, and a loosening of governance and design. The risk is a diminished ambition, or loss of momentum. LRNG are asking all these questions as they grow from an original city to 16 different cities, as the learner base grows and partners (and cities) join and drop out.

## 4. Mainstreaming or sustaining

Established initiatives will seek sustainable funding mechanisms and might find a permanent home in a part of the existing system. It is too early to say, without any longitudinal empirical evidence, where this might lead, but one might hypothesize that maintaining the blend of dynamism with stability could become an important focus.

Questions likely to be asked at this stage include

- How can the initiative be funded sustainably?
- How do new roles become embedded?
- How do we continue to evolve and develop?
- How do we scale impact?

The opportunity is to embed an enriched set of learning experiences for all young people. The risk is that the limiting norms and expectation of the existing system constrain the innovation. Kuopio Cultural Pathways have become mainstreamed into schools in Kuopio, serving to enhance and expand the existing formal education experience.



## A permanent state of flux?

To return briefly to the biological metaphor, an ecosystem in nature is in a permanent state of flux and so perhaps for those initiatives that seek to challenge or replace the traditional paradigm, progression to mainstreaming and sustaining should be resisted. Unlike most other programs and innovations whose goal is to achieve the wide adoption of new practices or models through mainstreaming, it might be suggested that the goal for learning ecosystems is perhaps rather to sustain the dynamic experimentation phase. In this context it is interesting to note that Global Education Futures, together with Skolkovo Education Development Centre, has created simulation software, which models the dynamics of "ecosystem development" in order to build capacity amongst innovators and pioneers in this space.

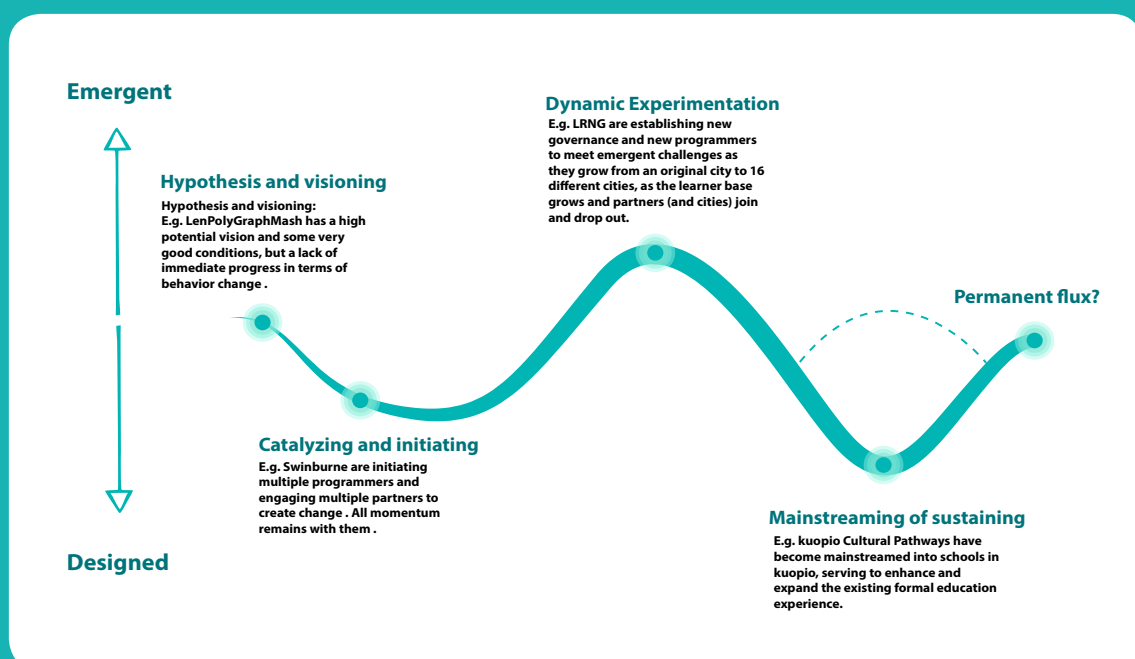
The flipside of ecosystemic models comes into play here: that of fragility and lack of permanence. Dynamism is not all one way and where ecosystems can flow they can also ebb. Whether an ecosystemic approach can sustain levels of educational quality and outcomes at acceptable (and improving) levels over time remains to be seen. Perhaps a hybrid of programmed and designed initiatives with ecosystemic qualities is a more appropriate end goal.

## Impact of learning ecosystems on existing learning provision

The learning ecosystems in the nine case studies vary in their relationships to the formal learning provision in place: some seek to disrupt, others to replace, still others to enhance and shape for the better.

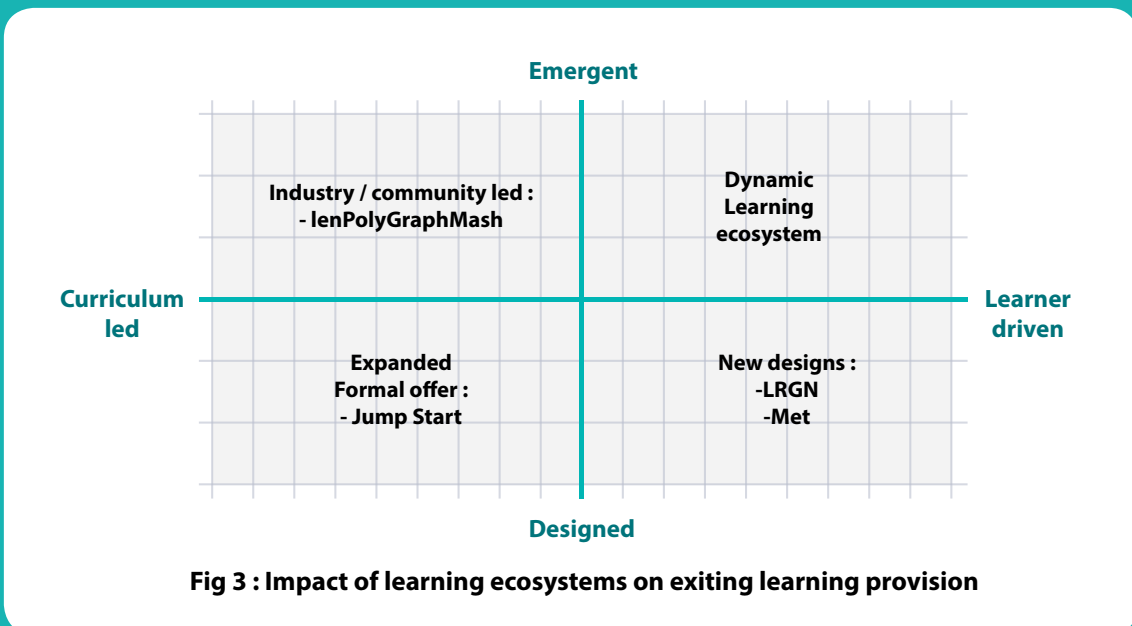
The potential for a new paradigm of learning is not always inherent in the intention of course, so it is perhaps more fruitful to analyse the cases across two axes already identified as important: the extent to which the learning ecosystem is designed or emergent, and the degree of learner agency involved. Learner agency is selected as a key characteristic because, as argued above and by a number of commentators (OECD, 2018; Leadbeater, 2016), it is one of the most powerful drivers of change in education. The shorthand definition for learner agency is the level of choice and voice learners enjoy. It is better understood as the degree to which a learner can:

- Set goals (personal and social)
- Initiate action toward those goals
- Reflect on and regulate progress toward those goals.
- Old belief in their own self-efficacy.
- Conceptualizing learning ecosystems along these axes invites the following reflection about their impact on conventional learning



Using this frame to analyse the case studies explored in this report and those indicated in the literature, we can begin to discern, conceptually, four broad categories of learning ecosystems:

1. Expanded formal offers: these initiatives are carefully designed with pre-determined curricula and/or outcomes. They seek to diversify learner experiences and opportunities, bring in new partners and achieve broader outcomes for learners. Typically led by a single institution or state agency. Examples include Jump Start, Kuopio Cultural Paths, and Swinburne. They have the potential to reshape organized learning to better meet twenty-first century challenges.
2. Industry or community led initiatives: where the skills requirements of a group from outside education (e.g. an industry sector) leads them to put in place conditions to enable new learning pathways and opportunities that meet the industry's need. Lower levels of student choice are matched by a high degree of freedom for providers and partners outside of formal learning systems. This category has the potential to disrupt traditional modes of learning through circumventing or side-lining the formal education sector.
3. New designs and new platforms: a high degree of learner agency meets intentional design and results in new wholesale designs for organized learning which involve multiple players (whether a school, such as The Met, or a technology platform, such as LRNG). These initiatives have the potential to replace an existing education system with alternatives that are more ecosystemic.
4. Responsively dynamic: this is where learner agency meets a dynamic and self-sustaining community of providers eager to support and enhance learning. Such a learning ecosystem would be characterized by responsiveness to economic conditions and learner demand, with truly distributed governance and funding. We did not find any examples of this happening at the current time, and it is not even easy to conceptualize. This form of ecosystem, if it existed, would either significantly challenge the role of the existing system, or in time even render it obsolete. Further work identifying any emergent models in this space would be extremely compelling.



# Chapter 7

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Conclusion: The Potential  
of Learning Ecosystems

## By now, it is apparent that the rhetoric and aspirations for ecosystemic approaches is running well ahead of what is to be found in practice.

Nevertheless, the empirical evidence is that here is an important education phenomenon, arguably possible only in the conditions of the twenty-first century technological environment, that does have the potential to transform learning. It is a very long way off being sustainable financially or of solving the thorny issues of credentialing, distributed governance, or evidencing wider outcomes.

We are confident that we have identified some of the leading exemplars, though with more time and resource we feel that initiatives fulfilling the criteria (i.e. not just community partnerships or school networks) could have been identified in the global south. Given the level of need, and the 'fit' for the urgency and scale of challenges, that would be an interesting next line of inquiry to pursue. Nevertheless, the case studies reveal some advanced and innovative learning ecosystems tackling some of the key questions which confront us. They are being led and designed by imaginative and committed educators who are overcoming entrenched organizational arrangements and mind-sets.

There is little doubt that some are edging towards a new paradigm. We know this because their leaders are grappling with the hallmarks of disruptive innovation (Christensen, 2008; Mulgan & Leadbeater, 2013), here defined as a new service (or product) initially taking root at bottom of a market (the under-served) but that eventually displaces established competitors. These hallmarks are:

### New and bigger goals

Our research informants, in one form or another, are reaching for ecosystemic solutions and approaches because their goals and purposes are larger and more expansive than conventional systems have either articulated or can achieve. These include engaging with the real problems of our world in ways schools working alone cannot.

### New skills, roles and expertise

Whether through the extended skills of teachers in relating to, and working with, other partners, or in the creation of quite new roles (couriers, ambassadors, connectors), disruptive innovation calls for new roles. Many of the things innovators in these programs are doing were simply not done 20 years ago.

### Focussing on the under-served

The equity challenge has explicitly driven the innovators profiled here to try to develop learning ecosystems. Some then face the challenge that, perversely, the new opportunities they create are more readily seized by the privileged amongst their communities.

### New players, new power relationships

One of the shifts in power relationships which is apparent is the emphasis on learner agency—particularly choice and voice. It is not just that new opportunities and pathways have been created: but also that young people are enabled to be active in deciding what these should look like. But in addition, the serious engagement of businesses, the cultural sector and the multiple other players who have been identified in the course of this research points to the need for new thinking about how education might be more inclusively governed.

### Shape shifting

The use of a wider variety of physical, organizational and digital spaces makes the 'architecture' of learning in our case studies distinctly different to conventions of schooling.

### New metrics

Whether this lies in developing badging systems (LRNG), or in devising more equitable vocational credentialing to sit alongside the academic (Jump Start), the ecosystems movement—if such it can be called yet— is one where the need for better assessment processes which are fit for purpose is recognized and addressed.

**Our conclusion is that, without a doubt, the movement towards learning ecosystems is full of potential for a transformation in how learning happens.**

But (at least at this level of complexity) it is in the very early stages, and faces formidable challenges to evolve into a new normal. Not least of these is the fact that, in contrast to classic disruptive innovations, the service models we have looked at require extra resources, not less, at least in what we have described as the catalysing and experimentation phase. Subsequently, if the ecosystemic approach is in addition to, or alongside existing systems (such as in the case of Kuopio), there is an additional cost in the mainstreaming and sustaining phase. If the new model dislodges the old—as in the case of The Met—the cost need be no greater and can be less.

As a field, it is still in ferment. A number of models will fail and disappear, as natural ecosystems do. Some will morph and develop in as yet unpredictable ways. The need now is to collect and share many more examples of initiatives in the field, particularly those from the global south.

## Annex 1: Experts consulted for interview

**Amelia Peterson**, Doctoral Candidate, Harvard University

**Anneli Rautiainen**, Head of Innovation Unit at Finnish National Agency for Education

**David Jackson**, Senior Associate, Innovation Unit

**John White**, Louisiana State Superintendent of Education

**Judy Halbert**, Co-leader of Networks of Inquiry and Innovation

**Linda Kaser**, Co-leader of Networks of Inquiry and Innovation

**Mònica Nadal Anmella**, Director of Research, Bofill Foundation

**Pavel Luksha**, Founder, Global Education Futures

**Rosie Clayton**, Associate Director, Cities of Learning

**Ross Hall**, Director, Ashoka Education Strategy

# Appendix 1: Deep dive interview schedule

## General

- Who are the learners? How do they benefit?
- What's the ultimate vision and mission of the learning ecosystem?
- What outcomes is the ecosystem working towards achieving for learners?
- What's the relationship with the formal schooling system?

## Impact

- What impact is the ecosystem having on traditional and wider learning outcomes?
- What is the impact on equity?
- Is the ecosystem enabling the scale and spread of high-impact innovations?
- What are the other social, economic, or environmental impacts?

## Characteristics

- Is there a role for catalysts and intermediaries and what does that look like?
- What new skill-sets are required?
- What metrics, new or old, is it using?
- What new relationships can be observed?

## Enabling conditions

- From your experience or knowledge, what are the enabling conditions for the development of high-performing local learning ecosystems?
- What kind of authorizing environment (if any) is required?
- What are the governance, ownership and funding conditions that enable or hinder success?
- What obstacles and breakthroughs have been encountered?
- What incentives are operating to engage different stakeholders and players?

## System leaders

- As new potential partners continue to enter the education space, what can system leaders do to harness the new opportunities they represent for the public system?
- What do system leaders need to do to ensure equity?
- What new roles and new skills are required for system leaders?

## Growth and scale

- (How) are innovative ideas encouraged and developed within the ecosystem? What supports are made available?
- From your experience or knowledge, what does it take to grow and sustain them?
- What do you see as the key issues in developing, implementing and sustaining an ecosystem?
- From your experience or knowledge what are the mechanisms for scaling an ecosystem?
- From your experience or knowledge, has an ecosystem enabled the scale and spread of a high-impact innovation?
- If so, what was unique about the learning ecosystem that allowed the scale of an innovation (e.g. digital platform), compared to other networks and systems?
- Can we learn anything about optimal size?
- Is there a tension between the ability of ecosystems to be locally grounded, and their ability to connect into wider jurisdictional or global resources?



## ABOUT THE AUTHORS

### Valerie Hannon, Board Director, Innovation Unit



Valerie co-founded Innovation Unit and leads Innovation Unit's international education work. She has supported education change programmes in numerous systems, including the UK, Europe, USA, Australia, and Africa, and is a founding member and Co-Chair of the Global Education Leaders Partnership (GELP). Valerie's career spans leadership of education systems, research, teaching and capacity building. She is now an established thought leader in the field of education innovation. Valerie is an expert adviser on education to the OECD, and a frequent contributor to the World Summit on Innovation in Education (WISE). She is a regular keynote speaker and facilitator at international conferences and workshops.

### Louise Thomas, Senior Innovation Consultant, Innovation Unit



Louise is a Senior Innovation Consultant at Innovation Unit. Specialist in young people and education, as well as an experienced innovation coach, manager and project designer, she supports work relating to education and young people at Innovation Unit. Louise has previously led major educational programmes of work including a trial of project based learning in English Secondary Schools and the design of a 'school for the future' for Qatar Foundation. She has extensive experience of working with schools in the UK and with system leaders internationally, developing successful partnerships with practitioners, funders and agencies committed to educational transformation in the US, UK, Australia and beyond.

**Tom Beresford**, Innovation Consultant, Innovation Unit



Tom leads a portfolio of projects at Innovation Unit, lending his expertise in education innovation and the scale and spread of innovations. His work ranges from new school designs and education technology to whole system transformation, in the UK, Australia and Sub-Saharan Africa. Tom is co-author of 'Creative Public Leadership: how school system leaders can create the conditions for system-wide innovation'; 'Innovating for Global Excellence: Australia's education opportunity'; and 'Against The Odds: successfully scaling innovation in the NHS'. He was awarded an 'Education Futures' research fellowship at the Winston Churchill Memorial Trust, leading to his 'Human-scale at Scale: cultivating new education cultures' report.

**Sarah Ward**, Researcher, Innovation Unit



Sarah is a skilled researcher working across Innovation Unit's education portfolio with a keen interest in how innovation can be implemented to create sustainable impact for all people. Her work ranges from co-designing bespoke outcomes frameworks that make explicit the aspirations schools have for all pupils, to research into the enabling conditions for education technology across Sub-Saharan Africa and South and Central Asia.

## ABOUT INNOVATION UNIT



Innovation Unit is a social enterprise based in the UK, Australia, and New Zealand that grows new solutions to complex social challenges. By making innovation happen we help create a world where more people belong and contribute to thriving societies. We build alliances with ambitious places, organizations and systems around the world to adapt, adopt and scale innovations that deliver lasting impact and reduce costs.

## ABOUT WISE



The World Innovation Summit for Education was established by Qatar

Foundation in 2009 under the leadership of its Chairperson, Her Highness

Sheikha Moza bint Nasser. WISE is an international, multi-sectoral platform for creative, evidence-based thinking, debate, and purposeful action toward building the future of education. Through the biennial summit, collaborative research and a range of on-going programs, WISE is a global reference in new approaches to education.

The WISE Research series, produced in collaboration with experts from around the world, addresses key education issues that are globally relevant and reflect the priorities of the Qatar National Research Strategy. Presenting the latest knowledge, these comprehensive reports examine a range of education challenges faced in diverse contexts around the globe, offering action-oriented recommendations and policy guidance for all education stakeholders. Past WISE Research publications have addressed issues of access, quality, financing, teacher training, school systems leadership, education in conflict areas, entrepreneurship, early-childhood education, and twenty-first century skills.

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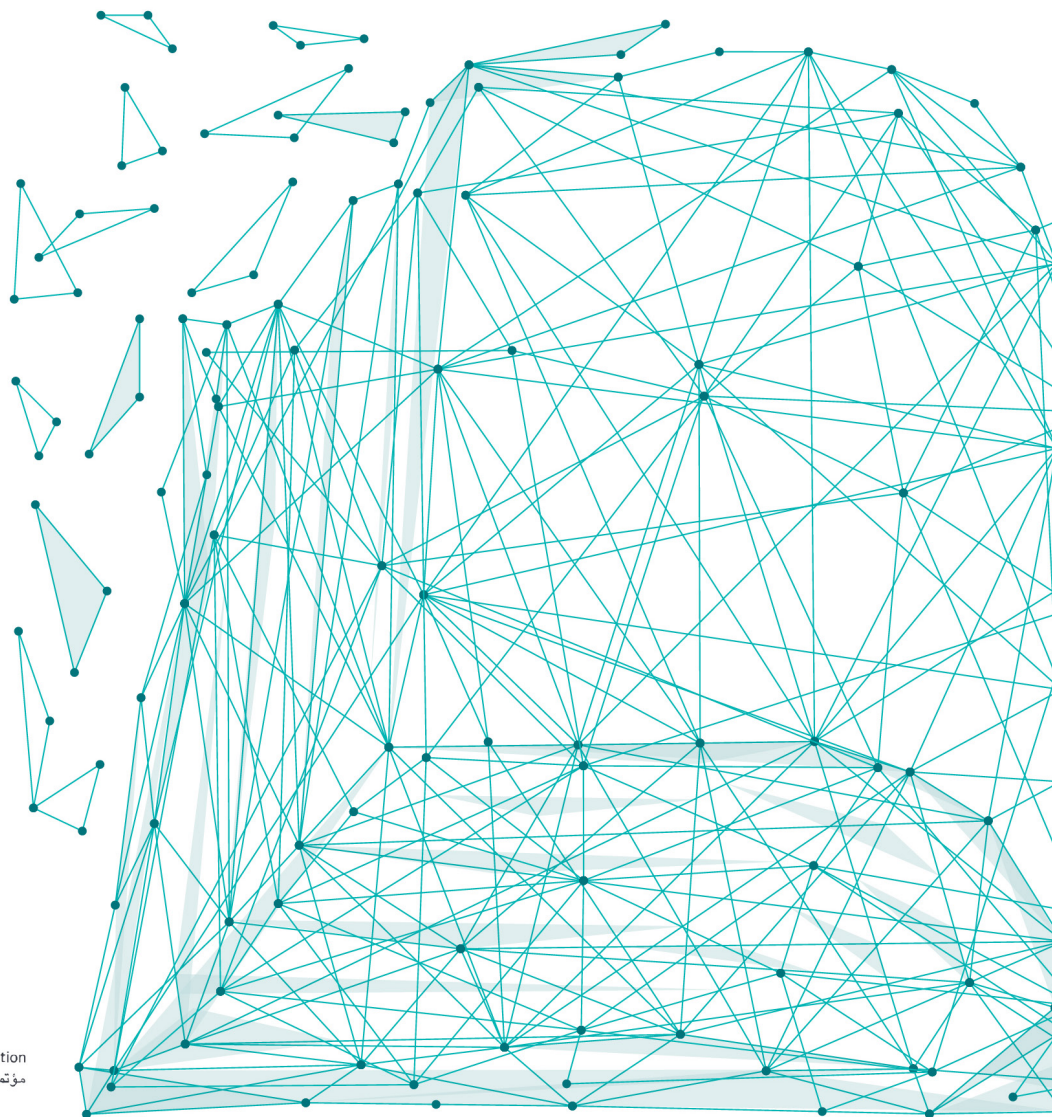
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