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ENTREPRENEURSHIP EDUCATION FOR LEARNING CITIES





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1

FOREWORD BY MAYORS



As the new engine of urban transformation and development, innovation and entrepreneurship are offering nonstop impetus to Chengdu's economic development. Chengdu is striving to provide effective solutions for the city to transform its development mode, optimize its economic structure and stimulate its growth momentum, and it's firmly believed that these will bring a happier and finer life to local residents.

Chengdu is actively pushing forward with building the learning city. Cultivating and spreading the ideas of innovation and entrepreneurship and popularizing it have benefited from the construction of a learning-oriented city in Chengdu for many years. To realize the dream of leading the local people to have a happier and more beautiful life, Chengdu is pursuing the sustainable development, including activating new vitality, stimulating new kinetic energy, and upgrading new business formats. I'm convinced that the deepened construction of a learning-oriented city will bring new benefits to the innovation and entrepreneurship demonstration in the park city of Chengdu.

Mr Wang Fengchao

Mayor of Chengdu



Economic, entrepreneurial, educational and social development are key issues for local authorities.

We are currently witnessing changes that are as rapid and complex as they are inevitable. Local authorities play a pivotal and active role as privileged observers, not only in terms of addressing citizens' needs appropriately, but also in providing the right answers to pressing questions in order to instigate change rather than suffer in the process.

Lifelong learning is essential: it informs local policies, which in turn provides local institutions with the input they need to best respond to challenges related to innovation and technology. Development – in its broadest sense – depends on the dissemination of skills and abilities.

The so-called digital revolution is having a significant impact on almost every area of our lives. However, major change is difficult to understand, and can trigger anxiety and resistance if the people faced with such change are not adequately prepared for it. Getting citizens ready for the digital society of the future means training and providing them with the skills and competences needed for innovation. New skills should not only be spread; they must be refined, evolved and adapted to new technologies and innovative practices.

In this context, Turin has launched the Turin City Lab project – a local and EU pilot project for testing innovation – that I am proud to present in this UNESCO publication as a model for the development of the cities of the future. Turin, the first Italian city to join the UNESCO Global Network of Learning Cities (GNLC), has been chosen by UNESCO to coordinate the network's entrepreneurship cluster with Chengdu (People's Republic of China). I trust that the Turin City Lab project will become a benchmark for other cities.

Ms Chiara Appendino

Mayor of Turin



ENTREPRENEURSHIP FOR LEARNING CITIES

Entrepreneurship and entrepreneurial education in learning cities

The European Commission defines the concept of entrepreneurship education as follows:

Entrepreneurship education is about learners developing the skills and mindset to be able to turn creative ideas into entrepreneurial action. This is a key competence for all learners, supporting personal development, active citizenship, social inclusion, and employability. It is relevant across the lifelong learning process, in all disciplines of learning and to all forms of education and training (formal, non-formal and informal) which contribute to an entrepreneurial spirit or behaviour, with or without a commercial objective.

(European Commission, 2014, p. 9)

A learning city that strives to make entrepreneurship central to its education offerings requires specific attributes, as outlined by Norman Longworth (2018). Above all, an entrepreneurial learning city must be a 'whole-city enterprise' (Longworth 2018, p. 18). It must involve 'a wide variety of stakeholders' (ibid., p. 21) from all walks of life and all market sectors. Furthermore, it 'goes beyond industrial and commercial entrepreneurship to embrace social entrepreneurship. By sharing their knowledge and abilities among each other, people acquire a sense of belonging to a dynamic city that is harnessing the skills of every citizen to ensure a viable future' (ibid., p. 18).

Learning cities create social spaces for sustainability-driven business projects, innovation and entrepreneurship by dedicating resources both to building relevant infrastructure and financial incentives, and to establishing inspiring learning environments. They support education, training and the development of job skills in formal, non-formal and workplace settings. They thereby help to fight poverty, strengthen the local economy and create decent work opportunities for their residents.

Learning cities also foster an entrepreneurial culture that extends to social and cultural activities. By supporting the work of artists and cultural institutions, learning cities acknowledge the cultural sector's contribution towards sustainability. They furthermore strive to support good working conditions to prevent mental and physical health problems and exploitation, particularly in the informal labour market, such as the black market.

The involvement of all citizens is key to building an entrepreneurial learning city. 'Many citizens and local communities share a deep need to participate and should be encouraged to contribute to the process of improving the city and their local neighbourhoods' (Dublin City Development Board, 2002, p. 4, cited in Longworth 2018, p. 17). In an entrepreneurial learning city, everyone becomes involved in entrepreneurial education – venture capitalists; economics and business studies teachers; company board members, managing directors and employees; local businesses; and citizens.

One of the most effective strategies for building an entrepreneurial learning city is to create partnerships between the public and private sectors. These are likely to boost future economic development and support the creation of a new generation of entrepreneurs or start-ups. These partnerships will also provide insights into the social, cultural and environmental issues that affect local and regional governments.

Entrepreneurial learning cities and COVID-19

With each new disruption and measure to restrict human activity in response to the COVID-19 pandemic, innovative strategies have highlighted the capacities of governments, businesses, communities and individuals to adapt. COVID-19 has had a strong impact on education systems, economic markets and local communities; initiatives targeting recovery are therefore crucial. This means both repairing the damage done and recalibrating cities so they can cope with the 'new normal' of living with COVID-19. This is a huge challenge, and the combined efforts of all sectors of society is needed for cities to achieve educational, social and economic recovery from the pandemic.

Cities' social, economic and educational recovery strategies have varied. The pandemic has profoundly affected the labour market. New modes of working have emerged, yet there has also been an impact on the identity of workers and occupations built around communities; it remains to be seen whether traditional communities focused on specific types of work and training can be rebuilt around new working models. As such, entrepreneurial learning cities will play a key role in paving the way for innovative recovery in the wake of COVID-19.



ENTREPRENEURSHIP AT THE LOCAL LEVEL¹

The importance of entrepreneurship education in building a learning city

Many researchers consider that the conceptual and practical expansion and implementation of social entrepreneurship are key to social development and human well-being. In recent years, the term 'social entrepreneurship' has frequently been used by politicians, entrepreneurs and employees to refer to entrepreneurial work that contributes to social development. Many entrepreneurial activities aim to increase companies' social value as well as their profits. Hence, social entrepreneurship has become a mechanism for mediating differences with regard to wealth, opportunities, education and the environment (Jiao, 2011). Ramírez et al. (2019) state that lessons centring on innovation and entrepreneurship skills can serve to introduce students to real-life contexts, thereby supplementing the academic learning process by incorporating experiences, knowledge and challenges shared by community members.

New venture formation is of considerable importance for economic growth and technological progress (Birch, 1979; Reynolds et al., 1994; Sheshinski et al., 2007). This is the main reason why entrepreneurial education is frequently considered an effective strategy that fosters innovation (Lin, 2004). As a result, a number of countries have instituted a wide range of entrepreneurship education efforts (Fayolle, 2000; Lin, 2004), and governments have issued innovation policies whose primary goal is to raise awareness among educational institutions and support potential entrepreneurship education initiatives at these institutions.

Policies for entrepreneurship education in learning cities at the local level

Policies for entrepreneurship education impact entrepreneurship significantly at the local level. In Limerick, Ireland, the Local Enterprise Office (LEO), which is part of the city and county council, drives the development of local enterprises, putting local micro- and small businesses at the heart of job creation. LEO supports business start-ups and the expansion of existing businesses. It also works to increase the employment rate for new or existing businesses by providing them with information, advice, training, mentoring, seminars and financial support. In 2019, the Mid-West Regional Enterprise Plan was launched to support enterprise growth and job creation through collaborative initiatives. Developmental policies, such as the National Skills Strategy 2025, Project Ireland 2040 and Future Jobs Ireland, highlight Ireland's drive to build effective entrepreneurial skills and strong enterprise. These policies are aligned with the higher education system's key strategic objectives, and support the promotion and growth of entrepreneurial skills and attitudes across their student and stakeholder populations. The key stakeholders, including the Limerick and Clare Education and Training Board and higher education institutions (HEIs) in the region, have an entrepreneurship strategy in place to support the growth and development of an entrepreneurial ecosystem, and to collaborate with local and national state agencies such as LEO, Enterprise Ireland, the Industrial Development Agency (IDA Ireland), Intertrade Ireland, local development organizations, local authorities, the Higher Education Authority (HEA), chambers of commerce and the private sector. HEIs are threading entrepreneurship and innovation

¹ An overview by Prof. Weiyuan Zhang

through their programmes and modules, and have been proactively embedding support for enterprise and innovation into their services for staff and students.²

In May 2016, the government of Chengdu in the People's Republic of China issued a policy and measures to promote the transfer of higher education institutions' scientific and technological outcomes as a means of breaking through existing institutional barriers and promoting collaborative outputs, education and research. In response to the decision of the Central Committee of the Communist Part of China (CPC) and the State Council to upgrade innovation and entrepreneurship, Chengdu issued measures for the in-depth implementation of an innovation-driven development strategy in October 2018. In November 2018, Chengdu's 'Venture Tianfu' action plan and promotion of innovation and entrepreneurship were commended by the General Office of the Council in Chengdu. Such measures support the development of the new economy, and facilitate the shift to new drivers of growth and increased employment.³

Funding entrepreneurship education in learning cities

In Chengdu, a multi-level entrepreneurial financing service system ('venture capital + debt financing + listing financing') has been established and more than 100 angel investment and venture capital funds have been set up. By 2020, the total funds managed by venture capital institutions exceeded 200 billion yuan. Furthermore, departments at all levels have allocated further specialized funds to support innovation and entrepreneurship.

Chengdu has set up a 350-million yuan angel investment guidance fund for technology ventures, established an angel investment mechanism ('guidance + profit-sharing'), and channelled the investment of social venture capital

into small and medium-sized technology enterprises at the start-up stage. So far, 14 angel investment funds have been approved and established with funds totalling 1.606 billion yuan; and 112 investment projects have been completed with a total investment of 844 million yuan.⁴

The Tianfu Cultural and Creative Equity Investment Fund (CCI), established on 25 September 2018, is the first ten-billion scale cultural innovation fund to be established for sub-provincial cities, central and western regions in the People's Republic of China, and new first-tier cities nationwide. The fund targets the eight key areas of cultural innovation industries identified in the Western China Cultural Innovation Centre Action Plan, among them media, film and television; creative design; culture and sports; tourism; music and art; conventions and exhibitions; and advertising.

Moreover, commercial banks are available to grant long-term loans in learning cities, and local authorities can provide start-ups with infrastructure and other assistance. For instance, Bamiyan, Afghanistan, is the first city to establish a microfinance institution to assist small and medium-sized enterprises (SMEs).⁵ In Mação, Portugal, the municipality not only has access to national funding schemes, it has also set up an 'incubator' programme in the city's business park to help found new companies.⁶

The role of stakeholders in implementing entrepreneurship education

Municipal authorities, schools, universities, community centres, training institutes, foundations and associations are the main stakeholders in implementing entrepreneurship education.

2 Source: Yvonne Lane, Limerick (Ireland) city representative in the UNESCO GNLC entrepreneurship cluster.

3 Source: Yuanyuan Diao, Chengdu (People's Republic of China) city representative in the UNESCO GNLC entrepreneurship cluster.

4 Source: Yuanyuan Diao, Chengdu city representative in the UNESCO GNLC entrepreneurship cluster.

5 Source: Mohammad Hakim Morshid, Bamiyan (Afghanistan) city representative in the UNESCO GNLC entrepreneurship cluster.

6 Source: Luiz Oosterbeek, Mação (Portugal) city representative in the UNESCO GNLC entrepreneurship cluster.

In Bamiyan, Afghanistan, three main stakeholders play significant roles:

(1) Dedicated unit within the municipal government

The Bamiyan municipality is responsible for providing equitable services that reduce poverty and unemployment. Through a dedicated unit, it has conducted projects that aim to provide job opportunities for its citizens, including opening shops in partnership with the private sector, which has generated 120 local jobs. With the construction of the Shahid Mazari Stadium, the city aims to promote sport and leisure facilities for its youth. To date, the project has created job opportunities for 15 citizens. An arts and crafts market has been constructed to assist women with their career progression, and has successfully helped 484 women to find a job.

(2) Bamiyan University

Bamiyan University plays a key role in instructing youth to generate new forms of entrepreneurship. The Faculty of Economics' Department of Management and Entrepreneurship has trained many undergraduates to date, which has led to noticeable added value in the areas of market development and entrepreneurship.

(3) Aga Khan Foundation

The foundation's Market Development Program focuses on the economic empowerment of women and the improvement of family livelihoods. It provides assistance in beekeeping, handicrafts, manual initiatives (e.g. mobile phone and motorbike repair services), and skills development programmes in areas such as computer literacy and the English language. The foundation provides professional learning opportunities and facilitates marketing campaigns.

The city of Wyndham, Australia, has established a number of programmes focusing on entrepreneurship services.

The city council initiated the WYNovation programme in response to local economic conditions, challenges and opportunities; and to resident and business community aspirations. The annual Wyndham business awards, hosted by the council and supported by local businesses and the education sector, are held in order to elevate the core values of business excellence, sustainability and responsibility. The council provides free business training on a range of topics, such as digital marketing, search-engine optimization, business start-ups and tax reduction strategies. The non-profit Wyndham Business Network connects local businesses. Furthermore, the Council Business Recovery and Growth Fund provides a free, three-month programme to help its citizens develop or restore their businesses. Ten local businesses have been selected to participate in the training programme, which consists of six online group sessions and 20 hours of one-to-one online coaching.⁷

Learning resources for entrepreneurship education

With the rapid development of online learning, the sharing of online resources relating to entrepreneurship skills has been widely favoured and supported.

Mação has developed a series of online learning materials for entrepreneurship education. Wyndham has set up multiple initiatives for students at Wyndham Tech School, including 'taster' courses, industry and careers presentations, and design thinking projects.⁸

The Torino Digitale project in Turin is digitalizing services in order to create a technologically advanced networking infrastructure that generates data that is then shared with citizens and third parties in order to enable them to develop innovative services. The city has launched two online

7 Source: Wyndham City Libraries, representing the city of Wyndham (Australia) in the UNESCO GNLC entrepreneurship cluster.

8 Source: Luiz Oosterbeek, Mação (Portugal) city representative in the UNESCO GNLC entrepreneurship cluster.

programmes for schools, 'RECONNECTIONS' and 'teaching 2.0', with the aim of implementing digital media for the purposes of teaching.⁹

In 2018, Chengdu initiated a free, one-year programme entitled '2019 Free Skills Upgrading and Training for 10,000 Employees'. It provides training in a range of skills at different levels, thereby helping employees to upgrade their vocational skills.¹⁰

Discussion and conclusion

Based on this overview, entrepreneurship education has been widely deployed in the construction of learning cities. Many cities have promoted entrepreneurship education through a range of policies and strategies designed to bring social and economic benefits, reduce poverty and improve citizen's quality of life. However, the success of entrepreneurship education depends on many important factors, including appropriate government policies; adequate financial support; participation and coordination mechanisms within institutions and among stakeholders; due attention to the needs of disadvantaged groups; sufficient learning resources; varying learning modes; and the deployment of key performance indicators and evaluations, among others. Although some cities have gained valuable experience of entrepreneurship education, few comparative studies have been carried out that examine how entrepreneurship education informs the construction of learning cities internationally.

The present publication, led by the UNESCO Institute for Lifelong Learning (UIL), is a cross-regional and cross-cultural comparative study focusing on ten cities around the world. As such, it constitutes a meaningful and valuable resource for authorities, institutions, entrepreneurs, educators, employees, students and individuals worldwide who are seeking to play an innovative and responsible role in their respective societies. We hope that this study will add to the literature in the field by drawing attention to the sustainable development of entrepreneurship education as a key element in the construction of learning cities.

⁹ Source: Isabella Calvagna, Torino (Italy) city representative in the UNESCO GNLC entrepreneurship cluster.

¹⁰ Source: Yuanyuan Diao, Chengdu (People's Republic of China) city representative in the UNESCO GNLC entrepreneurship cluster.



INTERNATIONAL SURVEY ON ENTREPRENEURSHIP IN LEARNING CITIES

Background

Enabling individuals to continue learning throughout their lives has become a priority for communities across the world. This is due mainly to a growing awareness that lifelong learning – a holistic, inclusive and sector-wide approach to learning – is crucial not only for individuals' well-being, but also for society as a whole. With their high population densities and complicated infrastructures, cities offer particularly favourable conditions for making lifelong learning opportunities available to all citizens. Enhancing and increasing such opportunities is the top priority of the learning city approach.

At the fourth Global Conference on Learning Cities held in Medellín, Colombia, in October 2019, the UNESCO Institute for Lifelong Learning (UIL) worked with member cities from the UNESCO Global Network of Learning Cities (GNLC) to establish a strategy centred on seven thematic clusters: education for sustainable development (ESD), equity and inclusion; entrepreneurship; global citizenship; health and well-being; educational planning; and literacy. This survey focuses on entrepreneurship: it describes the characteristics of learning cities and examines how these cities can promote the development of entrepreneurship.

In recent years, a significant amount of research has been undertaken into learning cities and lifelong learning. Much of it has focused on two aspects: government and education.

Previous research has shown that learning cities have the potential to facilitate collaborative governance by bringing

together municipal mechanisms of governance and institutional structures, thereby increasing the efficiency and sustainability of government business (Ofei-Manu et al., 2018).

Furthermore, existing research indicates that learning cities give high priority to the development of liberal education activities, and technical and vocational education and training (TVET) (Choi and Han, 2019; Pavlova, 2018), and thus positively influence citizens' career planning. Additionally, guidance and counselling systems are well established in learning cities, as are smart learning environments; these, too, can help citizens to develop their career plans and access lifelong learning opportunities (Zhang, 2016; Zhuang et al., 2017). Savva et al. (2019), meanwhile, argue that learning cities can leverage the numerous assets of individuals in community settings in order to establish dynamic collaborations that stimulate social inclusion, innovation and entrepreneurship. Entrepreneurship skills in turn can be integrated into general and vocational education to further promote the development of lifelong learning (Onstenk, 2003; Morselli, 2018). For example, work-based learning (WBL) curricula that promote social entrepreneurship, or courses focusing on collaborative learning and group work can prepare students to adopt a lifelong learning perspective as they embark on their career paths (Huq and Gilbert, 2013; Morselli, 2019).

However, although plentiful research has been conducted into the promotion of lifelong learning in learning cities, little attention has been paid to policies and practices centring on innovation and entrepreneurship at the city level.

Table 1 Ten learning cities and their respective populations

City	Population
Mação, Portugal	7,338
Cantarranas, Honduras	260,753
Bamiyan, Afghanistan	100,000
Chengdu, People's Republic of China (PRC)	16,581,000
Wyndham, Australia	255,322
Živinice, Bosnia and Herzegovina	57,917
Turin, Italy	892,276
Bahir Dar, Ethiopia	168,899
Limerick, Ireland	104,952
Vitebsk, Belarus	377,932

This study draws on data from 10 cities around the world (see Table 1) in order to analyse and summarize the measures implemented and outcomes achieved by these cities with regard to the promotion of innovation and entrepreneurship.

Purpose

This study contains guidance for developing innovation and entrepreneurship in learning cities. As such, it also provides a solid foundation for future research in these areas.

Research design and methods

The present study combines quantitative and qualitative research methodologies. The main research tool was a survey (questionnaire), which was sent to all participating learning cities. Responses to the questions contained in the survey were subsequently classified and analysed.

Ten cities participated in the survey (see Table 1). Each represents a specific region and all have an active interest in participating in this research.

The questionnaire comprised objective multiple-choice questions and subjective responsive questions. Due to the limited scale of the research object, this study applied a purposive sampling method: the 10 selected cities received the questionnaire by e-mail; the answers were then sent back to UIL by email and sorted using Microsoft Excel.

This study was conducted from October 2020 to March 2021 in six stages:

- 1) Literature review
- 2) Questionnaire design
- 3) Questionnaire demonstration (the validity of the survey content was checked by experts from UIL, the Global Apprenticeship Network – GAN and the European Training Foundation – ETF, and by project participants from the UNESCO GNLC coordinating cities, Chengdu and Turin)
- 4) Questionnaire implementation: ten valid questionnaires were issued and collected

- 5) Data analysis
- 6) Research report

Results

Section A of the questionnaire focuses on the overall status of entrepreneurship in learning cities with regard to four criteria: strategy or guiding documents; institutions and stakeholders; thematic areas; and examples of good entrepreneurship practice.

Combined with the data on monitoring and evaluation indicators/systems from section H of the questionnaire (which will be discussed in detail in due course), the data collated from Section A generates some insightful results.

First, with regard to the availability of a strategy or guiding document to promote entrepreneurship, we obtained the following responses:

Table 2 shows that most learning cities have taken measures to promote entrepreneurship initiatives at the city level. Indeed, 60 per cent have launched relevant strategies or guiding documents, and half of the cities that have not yet launched strategies are currently preparing relevant documents. In addition, the majority of cities (70 per cent) have access to examples of good practice in the field of entrepreneurship.

We further note a close correlation between a city's population and the status of its respective entrepreneurship policy. **Table 2** highlights that, in most cases, cities with a relatively small population have not yet launched a strategy or policy document to promote entrepreneurship. This could explain why less populated cities tend not to have examples of good practice in entrepreneurship.

However, it is important to mention that this does not apply in the case of Mação (Portugal). Although Mação is the least populated learning city surveyed, it has demonstrated

Table 2 Current status of entrepreneurship in learning cities

City	Population	City has published a strategy or guiding document for promoting entrepreneurship	City is in the process of developing a strategy or guiding document for promoting entrepreneurship	Examples of good entrepreneurship practice are available
Mação, Portugal	7,338	No	No	Yes
Cantarranas, Honduras	260,753	No	No	No
Bamiyan, Afghanistan	100,000	No	No	No
Chengdu, PRC	16,581,000	Yes	n.a.	Yes
Wyndham, Australia	255,322	No	Yes	Yes
Živinice, Bosnia and Herzegovina	57,917	Yes	n.a.	Yes
Turin, Italy	892,276	Yes	n.a.	Yes
Bahir Dar, Ethiopia	168,899	No	Yes	No
Limerick, Ireland	104,952	Yes	n.a.	Yes
Vitebsk, Belarus	377,932	No	Yes	Yes

significant success in implementing good entrepreneurship practices. For example, the city recently launched a new 'incubator' centre that combines experimental archaeology with traditional technical skills to create jobs and enhance the attractiveness of Mação as a cultural hub. Its progress in spite of the COVID-19 pandemic is a good example of effective entrepreneurship, and has had a strong and measurable social impact.

We subsequently analysed the main target groups of and stakeholders responsible for entrepreneurship in learning cities:

Figure 1 shows that learning cities take almost all groups into consideration. There are no obvious differences among the various groups, although adults receive the most attention.

Figure 1 The main target groups of entrepreneurship initiatives in learning cities

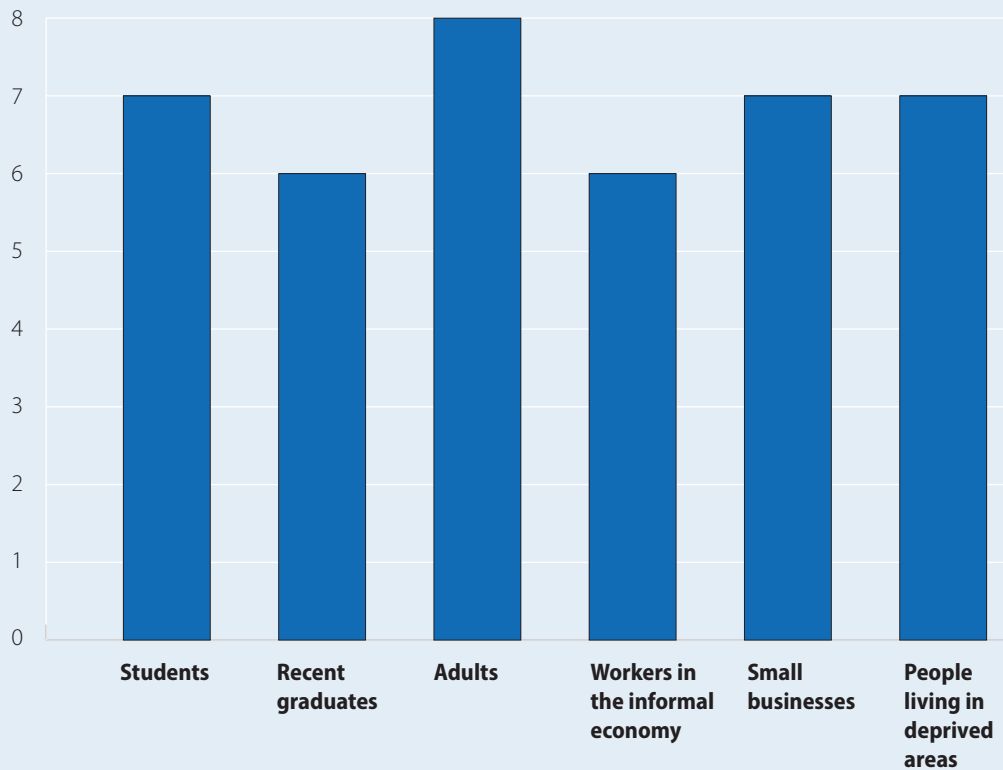


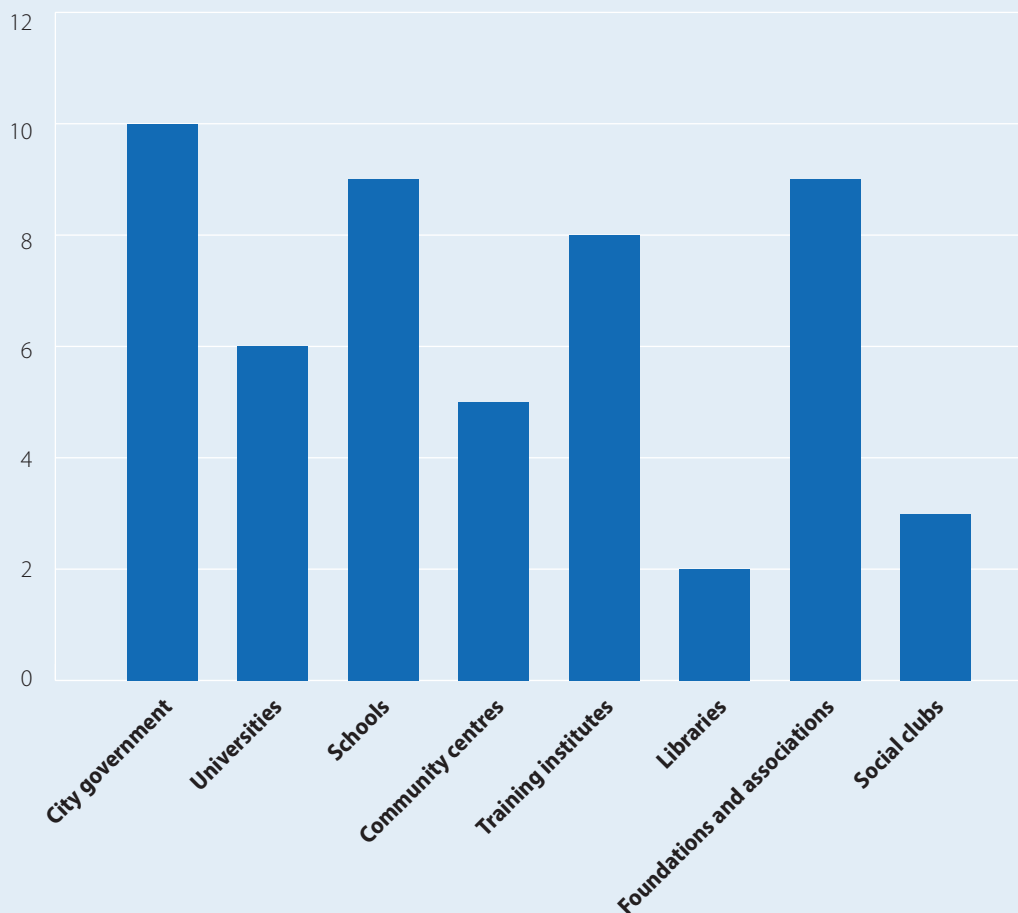
Figure 2 The institutions and stakeholders responsible for entrepreneurship initiatives

Figure 2 reveals that learning cities still use government action and messages as the main means of promoting entrepreneurship. Indeed, the governments of all participating cities are equipped to do so. Universities, foundations and associations are the main stakeholders behind the implementation of entrepreneurship initiatives, while libraries and social clubs are the least active.

A number of conclusions can be drawn from an analysis of the data above. First, although a majority of learning cities have a relevant strategy/guiding document, 40 per cent of them – mainly the least populated – still have no such document in place. Second, a wide range of groups are targeted by entrepreneurship initiatives. Finally, city governments, universities, foundations and associations constitute the most active stakeholders in entrepreneurship policy.

In sum, the majority of participating learning cities have a strategic or guiding entrepreneurship policy document in place, which is, in most cases, supported or complemented by other institutions and/or organizations.

The data collected in the questionnaire in section H (presented below) focus on the indicators/systems for monitoring and evaluating entrepreneurial work (all entrepreneurial activities promoted or undertaken at the city level).

Table 3 suggests that more than half of the cities monitor and evaluate their entrepreneurial work. 60 per cent have established some form of indicators/systems for monitoring and evaluating entrepreneurial work, either by the government and/or other stakeholders such as schools or universities.

Thematic areas of entrepreneurship (as defined in the questionnaire):

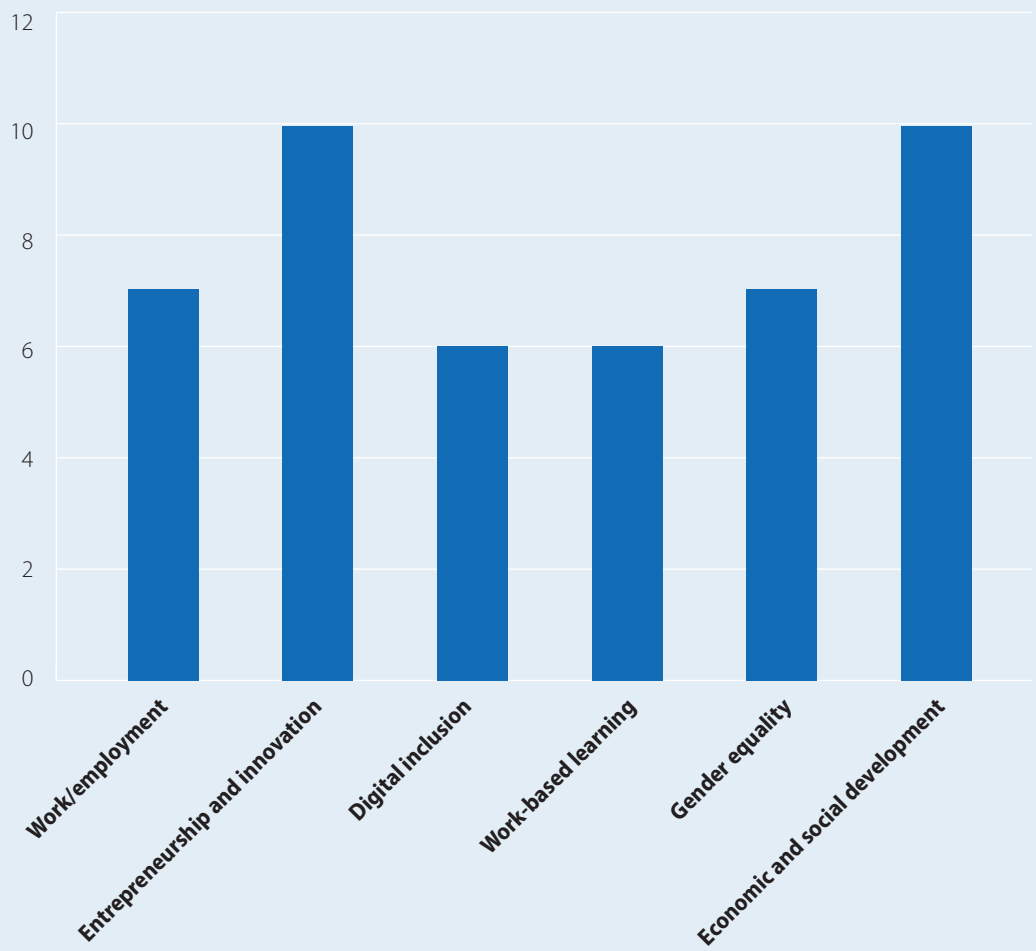
The questionnaire collected data on six thematic areas: work/employment, entrepreneurship/innovation, digital inclusion, work-based learning, gender equality, and economic and social development.

The questionnaire asked learning cities to indicate which of the above-mentioned thematic areas were of greatest interest to them in the context of their general policies on entrepreneurship. According to **Figure 3**, it appears that learning cities view entrepreneurship primarily from an economic perspective: entrepreneurship/innovation and economic/social development are the thematic areas that receive the most attention. By contrast, the thematic areas of digital inclusion and work-based learning receive the least.

Table 3 Monitoring and evaluation in learning cities

City	City has established monitoring and evaluation indicators/systems for entrepreneurial work	Stakeholder has established monitoring and evaluation indicators/systems for entrepreneurial work
Mação, Portugal	No	Yes
Cantarranas, Honduras	No	No
Bamiyan, Afghanistan	No	No
Chengdu, PRC	Yes	No
Wyndham, Australia	No	No
Živinice, Bosnia and Herzegovina	Yes	Yes
Turin, Italy	Yes	Yes
Bahir Dar, Ethiopia	No	No
Limerick, Ireland	Yes	Yes
Vitebsk, Belarus	Yes	n.a.

Figure 3 Entrepreneurship: thematic areas of interest to learning cities



The following sections of this report will analyse each thematic area in turn.

Work/employment

Seven of the cities surveyed have carried out activities in the thematic area of work/employment. **Table 4** indicates that five of them offer skills development programmes for vulnerable groups, e.g. school leavers, the unemployed, refugees, the poor, and people with special educational needs. All of these five cities also offer skills development programmes to all citizens.

In addition, six cities have employment agencies and online job databases that are publicly available. These resources enable citizens to find jobs or improve their professional skills and are easily accessible, as most people in the city are connected to the internet. Lastly, six cities offer reskilling programmes that are open to the general public,

thus allowing all members of society to benefit from more flexible career paths. For example, Chengdu issued an action plan for industrial vocational training and employment in 2009 in response to the international financial crisis, with the aim of promoting the sustained and rapid development of its industry and economy. In addition, it launched an action plan for employment in professional agricultural management in 2015 in order to provide training and re-employment opportunities for the unemployed, rural youth, manual workers, care workers for the disabled, manual workers in northern Chengdu, and urban and rural workers in earthquake-affected areas.

The city of Mação also offers several training programmes each year, largely with the support of European funds and with the collaboration of the private sector through local companies.

Table 4 Information on work/employment

City	Skills development programmes are offered to all members of society	Skills development programmes are offered to vulnerable groups	Employment agencies and online job databases are available to facilitate access to decent work opportunities	Reskilling programmes are offered to allow for a more flexible occupational pathway
Mação, Portugal	Yes	Yes	Yes	Yes
Cantarranas, Honduras	n.a.	n.a.	n.a.	n.a.
Bamiyan, Afghanistan	n.a.	n.a.	n.a.	n.a.
Chengdu, PRC	Yes	Yes	Yes	Yes
Wyndham, Australia	Yes	Yes	Yes	Yes
Živinice, Bosnia and Herzegovina	No	No	Yes	Yes
Turin, Italy	n.a.	n.a.	n.a.	n.a.
Bahir Dar, Ethiopia	No	No	No	No
Limerick, Ireland	Yes	Yes	Yes	Yes
Vitebsk, Belarus	Yes	Yes	Yes	Yes

Entrepreneurship and innovation

All 10 cities strongly encourage the development of start-ups and hence see entrepreneurship and innovation as an important thematic area. More specifically, eight of the 10 cities offer financial support to start-ups, but only six cities provide them with additional services, such as policies, materials, business plans, etc.

With regard to the cultural sector, seven cities offer some form of financial support to cultural start-ups, and nine provide additional services, such as policies, training and work spaces.

Entrepreneurship skills education for children and young people has received significant attention in almost all participating cities: eight cities have developed and implemented a variety of programmes and initiatives to

promote entrepreneurial skills among children and young people. For example, the city of Limerick has implemented a Student Enterprise Programme for secondary school students. It offers students the opportunity to build a business from the initial conceptual phase right through to production and sales, thereby allowing them to acquire a wide range of personal and business skills as well as management competences. Chengdu, meanwhile, has for the past 12 years hosted an annual youth entrepreneurship competition.

Lastly, nine cities have offered and supported infrastructure or facilities to encourage business development.

In sum, the majority of the learning cities surveyed here has strongly supported entrepreneurship and innovation by actively assisting and boosting start-up businesses.

Table 5 Information on entrepreneurship and innovation

City	Financial assistance is available for start-up businesses	Additional services are available for start-up businesses	Entrepreneurial skills are promoted among children and young people	City offers support infrastructures and/or facilities to encourage business development	Funding is provided for entrepreneurial projects in the cultural sector	Non-monetary support is available for entrepreneurial projects in the cultural sector
Mação, Portugal	Yes	Yes	Yes	Yes	Yes	Yes
Cantarranas, Honduras	No	No	No	No	No	Yes
Bamiyan, Afghanistan	Yes	No	No	Yes	Yes	Yes
Chengdu, PRC	Yes	Yes	Yes	Yes	Yes	Yes
Wyndham, Australia	Yes	No	Yes	Yes	No	Yes
Živinice, Bosnia and Herzegovina	Yes	Yes	Yes	Yes	Yes	Yes
Turin, Italy	No	No	Yes	Yes	No	No
Bahir Dar, Ethiopia	Yes	Yes	Yes	Yes	Yes	Yes
Limerick, Ireland	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes

Digital inclusion

Of the cities surveyed, six have been active with regard to digital inclusion. **Table 6** suggests that 83 per cent of the six cities pay particular attention to this thematic area in the context of entrepreneurship, while more than half (67 per cent) have established a programme to ensure that vulnerable and marginalized groups have the necessary skills (e.g. creative thinking, critical thinking, digital and computer skills, leadership skills, etc.) to engage in entrepreneurial activities.

Maçã, Chengdu, Turin and Limerick have demonstrated significant progress in the area of digital inclusion through the development and implementation of relevant programmes. One of the central objectives of Maçã's digital inclusion strategy is to provide free internet access to all city residents. Chengdu has developed and implemented three employment support bases in order to expand employment and entrepreneurship channels for people with disabilities:

an industrial development base; a centralized employment base; and a practical technique training base. Turin's 'City Love' initiative provides partners with free resources, activities and skills training in order to support local citizens and businesses in the context of the COVID-19 emergency. In Limerick, an inter-agency Digital Working Group was established following the publication of *Building Ireland's First Digital City: Limerick Digital Strategy (2017–2020)*. In 2021, it completed an extensive qualitative research study into the meaning and experience of digital inclusion among at risk groups in Limerick. The findings from this research will be used to raise awareness of digital exclusion and to work with stakeholders to implement responses and to influence policy in relation to digital inclusion.

Some cities, such as Vitebsk, Belarus, consider the topic of digital inclusion to be of importance in the context of entrepreneurship, but currently have no programmes in place to support it.

Table 6 Information on digital inclusion

City	City pays special attention to the topic of digital inclusion in relation to entrepreneurship	City provides programmes to help ensure that vulnerable and marginalized groups have the skills needed to engage in entrepreneurial activities
Maçã, Portugal	Yes	Yes
Chengdu, PRC	Yes	Yes
Wyndham, Australia	No	n.a.
Turin, Italy	Yes	Yes
Limerick, Ireland	Yes	Yes
Vitebsk, Belarus	Yes	n.a.

Work-based learning

According to the survey, six cities have carried out activities pertaining to the thematic area of work-based learning. Furthermore, half of the cities that are interested in work-based learning have offered training courses to companies for their employees.

Furthermore, all cities are supportive of workplace learning for employees, with more than half (70 per cent) encouraging transversal skills learning at work. Limerick has been particularly proactive in this regard: the Limerick and Clare Education and Training Board has collaborated with the Mid-West Regional Skills Forum to implement the government-funded Explore programme, which aims to promote the learning of transversal skills in the workplace. Accordingly, in 2020, a total of 55 employers enrolled 92 employees in the Explore programme. The programme is a regional skills initiative developed to help address Ireland's low level of participation in lifelong learning, specifically targeting people over 35 in manufacturing jobs and teaching them digital skills. The prospect of a more highly

skilled workforce provides an incentive for employers to offer free training to employees.

Cities have developed different approaches to work-based learning. Mação, Bamiyan and Wyndham provide services to help employees study and acquire cross-cutting skills in the workplace. In Bamiyan, professional learning is offered to new graduates through internships in educational institutions.

Chengdu also offers companies training courses for their employees, and encourages the latter to study in the workplace. As part of the city's 2019 skills upgrade and free training initiative for 10,000 employees, a number of training courses have been made available across Chengdu, such as training in the secondary sector for low-voltage electricians and manual carpenters. Providers plan courses around the needs of employees, and engage professional teachers to provide theoretical and practical training. After undergoing systematic theoretical and practical training and fulfilling the criteria set by the relevant departments, employees can obtain certificates of competence for the corresponding professions.

Table 7 Information on work-based learning

City	Incentives are offered to companies that provide training courses for their employees	City management encourages workplace learning for its employees	City management encourages transversal skills learning in the workplace for its employees
Mação, Portugal	No	Yes	Yes
Bamiyan, Afghanistan	No	Yes	Yes
Chengdu, PRC	Yes	Yes	No
Wyndham, Australia	No	Yes	Yes
Limerick, Ireland	Yes	Yes	Yes
Vitebsk, Belarus	n.a.	Yes	n.a.

Gender equality

Of the cities surveyed, seven have carried out activities in the thematic area of gender equality. **Table 8** suggests that gender equality issues in job training and employment as a whole have gained attention and support.

However, two aspects deserve further development. First, women's work in the family and community (e.g. child-rearing, home maintenance and voluntary activities) is still largely neglected by public and municipal authorities. Second, more initiatives and incentives need to be developed with the objective of supporting women's advancement to managerial and executive positions.

Bamiyan, Chengdu, Živinice (Bosnia and Herzegovina), Turin and Limerick have instigated major efforts to advance gender equality in the workplace. In particular, Bamiyan has introduced the Aga Khan Foundation programme to develop skills for women's empowerment. Chengdu in turn has supported the activities of the Women's Federation, which regularly organizes meetings with urban and rural unemployed and landless women to provide them with entrepreneurship and employment training, thereby promoting female entrepreneurship and employment.

Further measures could be considered by cities in order to strengthen the advancement of gender equality.

Table 8 Information on gender equality

City	Incentives are provided to businesses that actively support women's advancement to managerial and executive positions	Programmes are in place that actively promote skills development for women	Programmes are in place that actively promote and fund entrepreneurship for women	Work-related training is offered to women	Career information for women is provided without gender bias	Campaign has been held to acknowledge the work of women in the family and community
Mação, Portugal	No	Yes	No	Yes	Yes	No
Bamiyan, Afghanistan	No	Yes	Yes	Yes	Yes	Yes
Chengdu, PRC	Yes	Yes	Yes	Yes	Yes	No
Wyndham, Australia	No	No	No	Yes	Yes	No
Živinice, Bosnia and Herzegovina	Yes	Yes	Yes	Yes	Yes	Yes
Turin, Italy	No	Yes	Yes	Yes	Yes	No
Limerick, Ireland	Yes	Yes	Yes	Yes	Yes	Yes

Economic and social development

From **Table 9**, it can be concluded that the learning city concept is widely accepted and recognized in the ten participating cities, although there is still room for improvement with regard to raising awareness at a higher level (e.g. recognition at the national level) and providing practical resources (e.g. funds, data, relevant activities)

Specific implementation measures have been introduced in three cities: Bamiyan, Chengdu and Limerick. In 2013, Chengdu released the Implementation Plan for Building and Improving Lifelong Education covering all eligible participants in urban and rural areas of the city. To date, Chengdu has built nine community testing zones and national demonstration zones, covering 41 per cent of its jurisdictional area. The *Learning Limerick Strategic Plan*

2018 – 2022: Helping to Grow Limerick as a Learning Region was developed by the Learning Limerick steering group, representing the main stakeholders involved in promoting learning across Limerick city and county. This plan is a road map that plots the direction for Learning Limerick partner organisations, and others who want to contribute to the growth of Limerick as a vibrant Learning Region and to work together to make lifelong learning as accessible to everyone as possible.

While Živinice, Turin and Bahir Dar demonstrate a strong awareness and acceptance of the learning city concept, they need to intensify their practical implementation measures in this regard. Meanwhile, Mação, Cantarranas, Wyndham and Vitebsk may wish to consider taking steps to strengthen recognition and acceptance of the learning city concept and related practical implementation measures more generally.

Table 9 Information on economic and social development

City	Learning city concept is linked to municipal plans for economic and social development	Learning city concept is linked to national plans for economic and social development	Relevant stakeholders are involved in the learning city concept	Funds have been allocated to vulnerable groups in order to support them in finding and retaining work	Sex-disaggregated data on work and entrepreneurship have been collected to facilitate targeted educational planning
Mação, Portugal	Yes	No	Yes	Yes	No
Cantarranas, Honduras	Yes	No	Yes	Yes	No
Bamiyan, Afghanistan	Yes	Yes	Yes	Yes	Yes
Chengdu, PRC	Yes	Yes	Yes	Yes	Yes
Wyndham, Australia	Yes	No	Yes	No	No
Živinice, Bosnia and Herzegovina	Yes	Yes	Yes	Yes	No
Turin, Italy	Yes	Yes	Yes	Yes	No
Bahir Dar, Ethiopia	Yes	Yes	Yes	No	Yes
Limerick, Ireland	Yes	Yes	Yes	Yes	Yes
Vitebsk, Belarus	Yes	Yes	Yes	n.a.	n.a.

Conclusion

The purpose of the research carried out here was to present the results of an extensive international survey and thus provide a stronger point of reference for decision-makers seeking to develop entrepreneurship education in learning cities. Our analysis has revealed that citizens in learning cities have a proven understanding of the concept of entrepreneurship education, although their level of understanding varies to some extent across cities and regions. It should also be noted that the recognition and acceptance of entrepreneurship requires further improvement in a number of cities. In this context, it is hoped that the issue of entrepreneurship will, thanks to its growing popularity, more strongly inform the construction and development of learning cities in future.

The present study furthermore indicates that entrepreneurship initiatives at the city level have not been developed in the same way in all cities. Almost all cities with smaller populations and/or a lack of relevant entrepreneurship policies have been unable to introduce successful entrepreneurial practices.

We note that municipal authorities tend to play the lead role in the development of entrepreneurship education, while other institutions, such as schools, universities, community centres, training institutes, foundations and associations, support and complement these governmental initiatives.

Finally, we observe a further trend: entrepreneurship has become integral to sustainable development in learning cities across the world, especially with regard to their social and economic development. The survey demonstrates that most cities offer skills development programmes to all citizens, especially disadvantaged groups (e.g. people living in deprived neighbourhoods, school drop-outs and the unemployed), which are designed to equip them with the competences they need to find a job. The majority of municipal authorities also provide local start-ups with financial support, services and policies. It can thus be argued that entrepreneurship education fulfils the criteria of inclusive urban development, and provides much-needed and powerful support for a city's social and economic development.



LEARNING CITY CASE STUDIES: CHENGDU, TURIN AND LIMERICK

Chengdu, People’s Republic of China

Part 1: City profile

Name of the city:	Chengdu
Country:	People’s Republic of China
Total population:	20,937,757 Source: 2021 census
Unemployment rate (%):	3.2%
3 main industries:	<ul style="list-style-type: none">• Electronic data• New materials• Organic food

Part 2: Information on the case study

Chengdu ‘Venture Tianfu’ Action Plan for Citywide Innovation and Entrepreneurship (2015-2025)	
<p>What is the main focus of the initiative and whom/what does it target? (Max. 100 words)</p> <p><i>Brief description of the main objectives, specifying target groups and issues to be resolved</i></p>	<p>Venture Tianfu is an action plan issued by the highest administrative organ of Chengdu, which provides guidance for all departments in the city, including the Education Bureau, the Women’s Federation, the Federation for the Disabled, the Finance Bureau, the Employment Bureau, and the Taxation Bureau.</p> <p>The plan promotes the equitable cross-regional allocation of innovative and entrepreneurial resources through the primary market (i.e. the entrepreneurship and employment service market). It aims at creating a favourable environment for innovation and entrepreneurship, stimulating the</p>

development of diverse industries, boosting innovative and entrepreneurial talent of all kinds, and enabling innovation and entrepreneurship to drive sustainable urban development. Specifically, the plan establishes a community-based learning network, fosters innovative thinking among students, supports high-quality innovation and entrepreneurship projects through competitions, and provides continual assistance to entrepreneurs through a range of innovation and entrepreneurship services. The plan draws on the characteristics of a learning city, taking education as the starting point to create a fertile environment for mass entrepreneurship and innovation.

The plan furthermore seeks to improve public services for innovation and entrepreneurship, and to ensure that resources are allocated equitably and comprehensively. It focuses on different groups, including college students, homemakers, community residents, returnee entrepreneurs, and social entrepreneurs.

How was the initiative planned, set up and implemented?
(Max. 200 words)

Description including steps taken and timeframe

Following the guidance on the development of mass entrepreneurship space and the promotion of mass innovation and entrepreneurship issued by the General Office of the State Council in March 2015, the Chengdu municipal government issued the Venture Tianfu Action Plan in April of the same year. The plan incorporated the city's urban development goals and characteristics with the objective of boosting economic development. In April 2016, the Chengdu municipal government's press office released a revised and upgraded version (2.0) of the action plan, proposing a '3+M+N' model for innovation and entrepreneurship carrier space (i.e. leading area + agglomeration area + specialized area) to enable that space to function as an incubator.

In October 2018, Chengdu issued a number of policies and measures to support the implementation of an innovation-driven development strategy, and to upgrade the city vision for mass entrepreneurship and innovation by assigning responsibility for the creation of various resources to different municipal departments. Subsequently, various municipal departments issued a series of policy documents in their respective fields to support innovation and entrepreneurship. For example, the Municipal Bureau of Science and Technology formulated and issued policies and measures to build capacities in the area of scientific and technological innovation, and the Municipal Bureau of Finance introduced measures to manage the Chengdu Science and Technology Venture Angel Investment Guidance Fund. As regards the promotion of gender equality, Chengdu Women's Federation issued a framework for developing flexible employment for women in the home, and a

paper promoting the revitalization of traditional handicrafts. Women working in traditional crafts have been provided with skills training, tax incentives for female entrepreneurs have been introduced, and support for the creation of studio spaces has been provided.

With the assistance of departments at all levels, the plan has implemented a variety of social resources. By 2020, Chengdu had formed a comprehensive entrepreneurship support system. Since then, it has carried out cross-regional innovation and entrepreneurship initiatives based around the characteristics of a learning city. These include courses in innovative thinking for teenagers, entrepreneurship and employment training for adults, and entrepreneurial support services (covering issues such as intellectual property rights, financing, management and accountancy) for people starting a business. The public has also been actively involved in learning about entrepreneurship and innovation.

It is important to emphasize that all municipal functional departments will implement the city's innovation and entrepreneurship policies and projects in their respective jurisdictions. For example, the Women's Federation will provide skills training and tax incentives to support female entrepreneurs. The Chengdu Federation for the Disabled will provide re-employment training and courses for people with disabilities. All prefectures, municipalities and counties will offer innovation and entrepreneurship courses for residents in the local community.

By 2025, Chengdu will have optimized its innovation and entrepreneurship efforts, built its international reputation, and become known, both at home and abroad, as a city of entrepreneurship where citizens can realize their dreams.

Which stakeholders are involved? (Max. 150 words)

Main organizations/entities and their responsibilities; details of partnerships/collaborations

Government: The Chengdu Municipal Party Committee and government take the lead in guiding multiple departments to provide detailed policy and financial support for different fields (e.g. science and technology, culture) and groups (e.g. women and youth).

Universities and research institutes: Universities provide innovation and entrepreneurship education, and cooperate with research institutes to stimulate urban innovation and entrepreneurship.

Primary and secondary schools provide innovation and entrepreneurship education and activities for teenagers, both within the curriculum (e.g. programming courses) and through facilities (e.g. lecture theatres).

	<p>Enterprises and social organizations: The government has established a tripartite system, whereby all types of enterprises, social organizations and institutions can contribute innovation and entrepreneurship services, and thus play their part in constructing a comprehensive incubation system for innovation and entrepreneurship.</p> <p>Foundations and associations: In response to urban policies and development trends, various foundations and associations have set up investment departments or companies to provide incubation funds and services for mass entrepreneurship and innovation projects.</p> <p>Community residents: The community organizes education and activities for citizens, and provides services for mass entrepreneurship and innovation. At the same time, citizens participating in these initiatives provide feedback on local and urban development.</p>
<p>What resources (e.g. financial, material, human, infrastructural) have been mobilized/used in order to implement the initiative? (Max. 150 words)</p> <p><i>Description of any innovative approaches used to mobilize/utilize resources in order to implement the initiative</i></p>	<p>Funding guarantee: A multi-level entrepreneurial financing service system – ‘venture capital + debt financing + listing financing’ – has been established, and more than 100 angel investment and venture capital funds have been set up. Government departments will guide and supervise the system. The angel investment/venture capital funds will be supported by non-governmental investment institutions, and state-owned enterprises will be encouraged to set up venture capital subsidiaries, thus providing a diversified financing system for entrepreneurs across the city from the seed stage to the initial public offering (IPO). By 2020, the total funds managed by venture capital institutions exceeded 200 billion yuan. In addition, departments at all levels have allocated specialized funds to support innovation and entrepreneurship.</p> <p>Construction of a cascading incubation system: A cascading incubation system – ‘entrepreneurship nursery + incubator + accelerator’ – has been established. It is the largest of its kind in Central and Western China. Under the leadership of government departments, entrepreneurial bases will be established in various locations. For instance, the Agriculture Bureau will establish new agricultural entrepreneurship parks; the Education Bureau will assist universities in setting up incubation parks on campus; and the prefectures/cities/counties will build innovation and entrepreneurship parks in their respective jurisdictions. Scheduled incubation services include entrepreneurial skills training and policies, preferential tax policies, discounts on office rentals, and marketing and financial services. Furthermore, successful entrepreneurs, experts and scholars from all walks of life will be invited to provide one-to-one mentoring services.</p>

	<p>By 2020, the number of innovation and entrepreneurship providers had already reached 400, covering an area of more than 15 million square metres.</p> <p>Improved entrepreneurial service system: By 2020, a comprehensive entrepreneurial services system had been built, comprising 1,000 institutions and 2,000 mentors.</p> <p>Dissemination of innovation and entrepreneurship concepts: Concepts relating to innovation and entrepreneurship have been disseminated through education, the media and a range of other resources. This has promoted Chengdu's image as a city of entrepreneurship where all citizens can be successful, and created an environment in which entrepreneurship and innovation are supported by all.</p>
<p>How has the initiative been communicated?</p> <p><i>What communication, outreach and advocacy methods have been used to mobilize stakeholders and/or engage target groups?</i></p>	<p>Building a system of linkages and collaborative work: A system of linkages has been established at the district/county level by issuing better guidance with regard to the planning of regional innovation and entrepreneurship development, and by integrating relevant and/or more targeted policies.</p> <p>Strengthening mechanisms to evaluate innovation and entrepreneurship: Improvements have been made to the mechanism used to assess and monitor regional innovation and entrepreneurship. Key tasks have been delegated to relevant municipal departments and districts/counties, and incorporated into the management targets of the municipal Party Committee and city government. A further mechanism to monitor ongoing activities has been established and improved.</p> <p>Creating an innovation and entrepreneurship hub: Chengdu has built a high-tech zone (Chengdu Science City) in Tianfu, and a university science and technology innovation park. These core agglomeration facilities foster innovation and encourage all kinds of institutions offering science and technology services institutions to settle in the city. High-tech zones and qualified districts/counties are supported in building entrepreneurial premises and establishing a micro-ecosystem of entrepreneurial services.</p> <p>Chengdu global innovation and entrepreneurship fair: The city holds an annual fair to promote the convergence, integration and exchange of global innovation and entrepreneurship resources in Chengdu. International sister cities, renowned universities, well-known enterprises, industrial parks, investment institutions and other social entities are invited to participate.</p>

	<p>The fair has been held for seven consecutive years. It focuses on a different theme related to innovation and entrepreneurship each year, and serves as an information exchange platform for all kinds of institutions at all levels.</p>
<p>How has the outcome/impact of the initiative been monitored?</p> <p><i>Are there data-collection/ monitoring/ evaluation mechanisms in place to measure the outcome/impact of the initiative?</i></p>	<p>Supervision mechanism: Chengdu has delegated key innovation and entrepreneurship tasks to relevant municipal departments and districts/ counties, and has integrated them into the management targets of the Municipal Party Committee and the municipal government. In addition, Chengdu has established and improved a further mechanism to monitor ongoing activities, and designed work strategies with different characteristics to foster and distribute competition.</p> <p>Institution: The Chengdu Science and Technology Bureau has set up a science and technology research institute, whose work includes monitoring innovation and entrepreneurship activities in the city. The institute's monitoring and evaluation indicators focus on: the overall operational situation; the innovation and entrepreneurship ecology (innovation in science and technology; innovation and entrepreneurship providers; cooperations among universities and locals; funding for science and technology), and innovation-driven development (high-tech industry, technology contract transactions, granting of patents). The Chengdu science and technology research institute exclusively evaluates companies in emerging technological fields. It carries out regular surveys, after which it distributes public reports on the results of these surveys.</p> <p>Enterprise and individuals: A public feedback mechanism has been introduced and user satisfaction surveys focusing on specific jobs are carried out regularly.</p>
<p>Challenges and lessons learned?</p> <p><i>Description of the obstacles/main challenges encountered and lessons learned while implementing the initiative</i></p>	<p>More needs to be done to foster an atmosphere of innovation and to support entrepreneurship activities. Domestic and foreign macroeconomic fluctuations and the COVID-19 pandemic have weakened participation in innovation and entrepreneurship activities in recent years, and the development of innovation and entrepreneurship activities has yet to stabilize in various districts/counties. This instability is mainly due to a continuous decline in mass consumption during the pandemic. For example, a slump in commodity and service consumption was detected from January to February 2020: retail sales of goods fell by 17.6 per cent year-on-year, and catering revenue dropped by 43.1 per cent. Further action is needed to strengthen innovation and entrepreneurship</p>

activities, and Chengdu must capitalize more fully on the characteristics of a learning city, taking education as a starting point, in order to provide online education and encourage a spirit of innovation and entrepreneurship spirit that will better equip the city to adapt to change.

The construction of high-quality provision for innovation and entrepreneurship needs to be reinforced: while the city is seeing rapid development in this area, service capacity still needs to be improved. There continues to be a shortage of high-quality innovation and entrepreneurship providers, while the innovation resources introduced to bolster industrial sectors, especially high-quality science and innovation spaces, remain insufficient.

Chengdu needs to further improve the level of services offered by innovation and entrepreneurship providers, accelerate the construction of high-quality innovation and entrepreneurship facilities in industrial sectors, and intensify efforts to establish high-quality scientific and technological spaces.

Further action is needed to transform scientific and technological aspirations into achievements. A basic technology transfer system is in place, but problems remain: an unstable technology transfer chain, an inadequate service system, and imperfect service mechanisms. The world's leading consulting and management companies have yet to settle in Chengdu, and globalization-oriented patent protection strategies do not benefit more entrepreneurial companies. The total number of institutions providing technical transfer services is relatively low, as is the capacity for providing such services, and levels of standardization and marketization are not high. Chengdu must therefore strengthen government guidance services and support more technology transfer institutions in taking the lead. At the same time, the city needs to improve its multi-level training offerings and development mechanisms attract more technology transfer talents in order to expand its team, capitalize more fully on the potential of learning cities to promote urban development, and carry out training through various learning networks.

Further information and guidance?

Advice to those interested in setting up a similar initiative, including links and email address for support

Innovation and entrepreneurship play a pivotal role in the sustainable development of a learning city. Hence, the city's innovation and entrepreneurship plan should be consistent with its urban development goals. For example, while promoting innovation and entrepreneurship and the construction of a learning city, Chengdu incorporates the development goals it is pursuing to become a 'park city'. Hence, it uses park city facilities (e.g. incubation spaces, community spaces) to create learning zones that people

can enter and experience at any time. More flexible, creative, socially interactive and aesthetic learning methods are deployed within these ecologically friendly, responsive and convenient learning spaces.

The city should give free reign to the positive role of innovation and entrepreneurship education in employment and entrepreneurship. Thus, it should strive to create an entrepreneurial culture and atmosphere in which citizens are willing to experiment and learn from their failures in pursuit of their dreams. By cultivating this urban spirit through its focus on innovation and entrepreneurship, Chengdu is activating and empowering its citizens.

Figure 4: Chengdu New Economy Committee, Chengdu Global Innovation and Entrepreneurship Fair 2019. Source: Xinhua News Agency



Figure 5: Chengdu employment and entrepreneurship base for people with disabilities. Source: Chengdu Federation for the Disabled



Figure 6: Training in Shu embroidery. Source: Chengdu Women's Federation

Turin, Italy

Part 1: City profile

Name of the city:	Turin
Country:	Italy
Total population:	885,094
Unemployment rate (%):	8.2% Source: Istat (Institute of Statistics, 2020)
3 main industries:	<ul style="list-style-type: none">• Automotive (e.g. Stellantis)• Food & beverage (e.g. Lavazza)• Chemicals

Part 2: Information on the case study

Turin City Lab	
<p>What is the main focus of the initiative and whom/what does it target?</p> <p><i>Brief description of the main objectives, specifying target groups and issues to be resolved</i></p>	<p>Turin supports the comprehensive testing of innovative solutions submitted by private operators, most of which are start-ups and SMEs not limited to the ICT sector and operating in any field related to urban innovation. The city provides physical and technological infrastructures, partnerships and expertise to test and scale up the proposed innovations.</p> <p>Building on its regional know-how and industrial tradition, Turin has become an open laboratory for innovation, able to attract companies and skills to guide its development. It supports pioneering technologies in the field of artificial intelligence and robotics that improve quality of life, are environmentally friendly and socially sustainable, and fit into the urban context, including: self-driving and connected vehicles, drones, appliances that are part of the Internet of Things (IoT), and 5G.</p>
<p>How was the initiative planned, set up and implemented?</p> <p><i>Description including steps taken and timeframe</i></p>	<p>The Turin City Lab (TCL) is a real-life laboratory open to all companies (start-ups, SMEs, large companies, social enterprises, etc.) interested in testing innovative solutions that are of public interest in Turin. Here, 'solutions' refer to products, technologies, processes and services that address a specific problem, either individually or in combination. 'Innovative' designates a solution that is new or</p>

significantly improved compared to those currently available on the European market, i.e. the solution in question is usually still at the pre-commercial stage and TCL gives preference to pioneering innovations. 'Public interest' refers to the purpose of this initiative: to support solutions that focus on urban living; positively influence policies, services and public assets; and create social impact. In the medium term, TCL's areas of intervention are aligned with those laid down in its plan to become a 'smart city'. A Smart City is intended as a city which, respects the environment, reduces emissions for buildings and industries, promotes innovative transports solutions for the community and improves the quality of life and fostering the well-being of its citizens in the long term.

Specific challenges or priority areas are identified periodically and can lead to the establishment of 'thematic laboratories'. Such areas are identified through requests submitted to the relevant city services departments, consultations between TCL partners, and other cooperations.

As noted above, TCL is a platform initiative aimed at companies interested in testing innovative solutions for urban living. The initiative is directed at businesses, potentially in partnership with research and development teams or other civic associations. Citizens/targeted user communities can be involved into testing activities promoted by companies, thus contributing to the co-development and testing of innovative solutions and future services.

The city is committed to providing feedback on submitted proposals following an evaluation period of 60 working days, starting from the date on which the proposal is received. This process may take a further 45 days for eligible proposals requiring specific authorizations.

The initiative was launched in 2018 by the city of Turin, the Department for Innovation, and the Smart City Department. From the outset, it has been supported by a range of partners from various sectors.

Thanks to the involvement of relevant municipal departments and its partner network, TCL:

- facilitates access to public spaces and assets, including intangible assets (processes, services, and data);
- expands and strengthens relationships within the local innovation ecosystem through an articulated network of partners;

	<ul style="list-style-type: none"> • supports scaling up solutions and promotes them through networks and projects on a local, national and international scale; • aims to involve end-users and citizens, highlighting local challenges and supporting the active participation of interested communities through calls for action. <p>TCL currently promotes co-development and testing in the following areas: autonomous mobility services, with a focus on self-driving vehicles and drones for the transportation of people and things; innovative urban services, enabled by 5G technologies: city applications of artificial intelligence and collaborative robotics, IoT, and augmented and virtual reality.</p>
<p>Which stakeholders are involved?</p> <p><i>Main organizations/entities and their responsibilities; details of partnerships/collaborations</i></p>	<p>TCL has 72 partners in the following sectors: utilities (11); corporate (13); research and innovation (39); international scaling (6); venture capitalism (14); and media (2).</p> <p>TCL operates through two channels:</p> <ol style="list-style-type: none"> 1. The 'Open Lab' – a free online application platform that is always open to any sector of relevance to a smart and sustainable city. 2. A dedicated call for submissions linked to specific urban challenges, open at intervals and with variable conditions to establish 'thematic laboratories'. To date, three such laboratories have been launched: <ul style="list-style-type: none"> • LAB IoT – dedicated to testing solutions related to IoT technologies with the aim of improving urban living. Lab AXTO – dedicated to testing solutions related to the shared/circular economy in order to address the challenges faced by urban peripheries. • Edulab – dedicated to testing innovative learning technologies (ongoing). <p>Furthermore, TCL can operate through temporary initiatives, such as the 'City Love' campaign launched in March 2020 to help Turin and its citizens deal with problems arising from the COVID-19 health emergency.</p>

Finally, eight ‘living labs’ are being set up as part of the following European projects which are listed in this section later on.

Depending on their testing needs, companies can access up to four stress test areas, each of which offers optimal testing conditions and the requisite physical infrastructures. These comprise:

- 1) Doralab – a designated area of a city park where innovative services enabled by drones can be tested (e.g. building maintenance checks, delivery of goods, etc.).
- 2) Smart Road Circuit – a 35 km stretch of road where self-driving/connected vehicles can be tested.
- 3) EDULAB Educational Living Lab – a fully equipped school environment where learning technologies can be tested.
- 4) Clean Tech Lab, located in various ecological parks and in Mirafiori (a district to the south of the city).

What resources (e.g. financial, material, human, infrastructural) have been mobilized/used in order to implement the initiative?

Description of any innovative approaches used to mobilize/utilize resources in order to implement the initiative

TCL is managed by a dedicated team (3 to 5 part-time staff) working in collaboration with designated ‘innovation experts’ from other municipal departments on a case-by-case basis. A small initial budget has been allocated to cover the cost of images, a website and a platform, totalling around 30,000 euros over a period of three years.

As noted, TCL relies on collaborations with its partners, chosen according to the expertise and focus required for each project. To optimize TCL’s services and scope, the TCL team worked to secure funding for larger trials. For the period 2018–2020, the city was awarded approximately 2.5 million euros of European funding from the following six European projects: CWC - City Water Circle; 5G Eve; 5G Tours; LEA – Learning Technology Accelerator; ProGireg; and Too(l) smart. Since then, a number of new projects have been initiated. Turin City Lab has also attracted six further research and development (R&D) projects funded by the European Space Agency (ESA) as part of a dedicated collaboration agreement. However, its main initiative is currently the ‘Turin House of Emerging Technologies’ (‘Casa delle Tecnologie Emergenti’ – CTE), a new project which is being implemented by Turin City Lab by drawing on its experiences, enlarging its scope accordingly, and expanding its assets and services over the next four years. On 29 December 2020, Turin was ranked first in the Ministry of Economic

	<p>Development's list of applicants to set up a CTE. Turin's project, dubbed CTE NEXT, will establish a major technology transfer centre focusing on emerging technologies in sectors of strategic importance to the city. These comprise: smart mobility, industry 4.0 and innovative urban services. CTE NEXT will have its headquarters in a new wing of the CSI data centre, 'CSI NEXT', which is already under construction. Once established, the project will cover a large area of the city, enhancing Torino's assets and increasing its partner network to support the different functions and aspects of the project.</p> <p>CTE NEXT will be financed from 7.5 million euros of ministerial funding, and 6 million euros provided by partners involved in the initiative.</p>
<p>How has the initiative been communicated?</p> <p><i>What communication, outreach and advocacy methods have been used to mobilize stakeholders and/or engage target groups?</i></p>	<p>TCL has its own logo, a modern website (Italian/English) and social media channels. A newsletter is also issued periodically. The TCL website has won several prizes (e.g. 'TouchPoint Awards/Identity 2020').</p> <p>Communication outreach has been further enlarged through:</p> <ul style="list-style-type: none"> • participation in international events and networking activities; • participation in international competitions (ENoLL Living Lab Prize 2020; Barcelona Smart City Finalist 2020; LUMI Ecohitech Award 2019, 2020; SMAU 2019, 2020); • initiatives organized in collaboration with the project's extensive partner network, specifically its media and international scaling partners; • temporary campaigns, such as Turin City Love, which had a tremendous impact at the national and international levels. <p>Turin was recently nominated by Harvard University to serve as a new urban laboratory during the 'Smart Cities' project, a cycle of online events on smart cities. The global network of leaders and innovators, Harvard Alumni Entrepreneurs, has commended the city for its entrepreneurial spirit and innovative choices, and Turin is fast becoming one of Italy's leading cities for start-ups, especially in the field of sustainable resources. Boston University has also expressed interest in a future partnership.</p>

	<p>A number of international partners further support TCL's activities:</p> <ul style="list-style-type: none"> • Techstars accelerators; • 'Big Booster' international accelerator; • ESA; • members of the European Network of Living Labs (ENoLL) network.
<p>How has the outcome/impact of the initiative been monitored? (Max. 200 words)</p> <p><i>Are there data-collection/ monitoring/ evaluation mechanisms in place to measure the outcome/impact of the initiative?</i></p>	<p>Trials are monitored periodically, thanks to key performance indicators (KPIs) that were defined at the start of the project and subsequently included in trial contracts. At the end of each trial, a final monitoring report is drafted that takes into account the point of view of all parties involved.</p> <p>Since 2018, around 75 proposals have been submitted through the Open Lab platform and assessed. Of these, 40 proposals were admitted for testing, and approximately 25 are now active or in the implementation phase. Main focus: smart mobility, drone-enabled urban services, IoT and robotics.</p> <p>Thematic laboratories currently comprise:</p> <ul style="list-style-type: none"> • Lab IoT (2017–present): nine trials (three of them still ongoing). • Circular&Sharing Lab (2018–2020): seven trials. • EduLab (2019–present): four projects, two trials completed. <p>Turin's City Love campaign generated more than 90 projects/resources in four months. The overall impact of the initiative will be assessed by the end of 2021 when the three-year project is completed. The final assessment will examine:</p> <ul style="list-style-type: none"> • new solutions on the market; • new start-ups; • participating companies carrying out R&D activities (including from abroad); • employment;

	<ul style="list-style-type: none">• new public services (inspired by the trials);• leverage funding activated through national and European funding;• collaboration with international networks. <p>A qualitative survey will be deployed to determine the impact/acceptability of various solutions from the citizen/community perspective, and to explore how these projects have improved relationships within the local innovation ecosystem.</p> <p>Data are currently being collected and will be available soon.</p>
<p>Challenges and lessons learned? (Max. 150 words)</p> <p><i>Description of the obstacles/main challenges encountered and lessons learned while implementing the initiative</i></p>	<p>TCL has its roots in Turin's long-standing reputation as an Italian city of innovation, whose productive, social, cultural and educational assets support the development of significant innovation projects.</p> <p>The real value of the project is partnership, and it has led to the establishment of an extensive network that amplifies opportunities, creates synergies and boosts dynamism.</p> <p>The main challenges faced by the project are:</p> <ul style="list-style-type: none">• timing trials effectively that involve many different sectors/partners/city departments;• monitoring the trials;• managing the vast partner network;• ensuring the quality of proposals submitted and encouraging participation from abroad. <p>Above all, it will be important not only to showcase but also to improve the shift from testing to scaling.</p>

Further information and guidance? (Max. 100 words)

Advice to those interested in setting up a similar initiative, including links and email address for support

Turin City Lab:
www.torinocitylab.it/

Turin City Love:
www.torinocitylab.it/en/submit-to/challenge/torino-city-love

House of Emerging Technologies:
<https://www.torinocitylab.it/en/news/486-first-tests-of-telepresence-robots-at-palazzo-madama-and-gam>
<https://www.torinocitylab.it/en/news/553-casa-delle-tecnologie-emergenti-about-14-millions-in-funding-for-Torino>

News:
www.torinocitylab.it/en/#newz



Figure 7: CTE NEXT event. Source: Torino Municipality Archive – Smart City Innovation Department

Limerick, Ireland

Part 1: City profile

Name of the city:	Limerick
Country:	Ireland
Total population:	104,952 – Limerick Metropolitan Area – 2016 census (194,899 – Limerick City and County – 2016 census)
Unemployment rate (%):	14.4% (Source: Limerick City and County, 2016)
Main industries:	<ul style="list-style-type: none">• Manufacturing• Biopharma/medical• Fintech• Retail/hospitality• Information and communication technology (ICT)

Part 2: Information on the case study

Limerick's 'From Unemployment to Enterprise' initiative	
<p>What is the main focus of the initiative and whom/what does it target?</p> <p><i>Brief description of the main objectives, specifying target groups and issues to be resolved</i></p>	<p>Limerick as the third-largest city in Ireland is a thriving municipality but faces challenges relating to unemployment in its deprived 'blackspots'. Of the ten blackspots with the highest unemployment rates in Ireland, eight are located in the Limerick metropolitan area (2016 census).</p> <p>This initiative thus focuses on helping the long-term unemployed to take up self-employment by offering the targeted support, such as the Back to Work Enterprise Allowance (BTWEA) scheme; advice, guidance and mentoring services; and Enterprise Training Programmes. The initiative is implemented by PAUL Partnership (a local development company based in Limerick), the Department of Social Protection (DSP), and the Limerick City and County Council's Local Enterprise Office (LEO), all working together to achieve a common aim of supporting entrepreneurship among the target population.</p>

How was the initiative planned, set up and implemented?

Description including steps taken and timeframe

Partners have been collaborating since the early 1990s. The BTWEA scheme was first introduced nationally by the Department of Social Protection (DSP) in 1993.

The BTWEA scheme was designed to encourage the long-term unemployed to take up self-employment opportunities by allowing them to retain a proportion of their social welfare payment, plus secondary benefits, over two years. A Self-Employed Means Tested Payment (SEMP) is also available for those who may need more support while their business becomes viable. These schemes are provided by DSP but administered locally by PAUL Partnership on its behalf.

PAUL Partnership provides an Enterprise Support Service to unemployed people who want to become self-employed. They are provided with one-to-one advice and guidance to enable them to:

- explore a business idea;
- access relevant enterprise training;
- apply for the DSP's BTWEA;
- explore the reality of self-employment;
- write a business plan.
- One-to-one access to a panel of business mentors

Together, PAUL Partnership and LEO provide a jointly funded Enterprise Training Programme to small businesses or individuals seeking to set up their own business. The programme consists of a selection of finance, sales & marketing and other business-related courses and events. All courses/events are free of charge. LEO also provides Start Your Own Business training.

The partnership concept is laid down in key national strategies, and regional and local strategies, e.g. the National Social Inclusion Strategy, the National Skills Strategy and the Mid-West Regional Enterprise Plan. Limerick has a strong history of partnerships among its agencies, which comprise the Limerick City and County Council (and LEO), local development companies, DSP, the Limerick and Clare Education and Training Board, and higher education partners. These agencies ensure that the voice and needs of the community sector are strongly represented across key fora in Limerick.

Which stakeholders are involved?

Main organizations/entities and their responsibilities; details of partnerships/collaborations

- DSP (Limerick) – a government department that administers Ireland's social welfare system. DSP provides BTWEA and SEMP payments, and refers interested clients to PAUL Partnership.
- LEO – a 'first-stop shop' providing support and services to help start, grow, and develop micro- and small businesses. LEO is part of the Limerick City and County Council. Together with PAUL Partnership, it offers an extensive Enterprise Training Programme.
- PAUL Partnership – the local development company for Limerick. It works with local communities and groups of people that have benefited least from economic and social development. It has delivered an Enterprise Support Service to long-term unemployed since its formation. It collaborates with LEO to deliver Enterprise Training Programmes and, on referral from the DSP, helps people to apply for BTWEA.
- Limerick's further education and higher education partners, the Limerick and Clare Education and Training Board, the University of Limerick (UL), the Limerick Institute of Technology (LIT) and Mary Immaculate College (MIC) also support these pathways for learners and entrepreneurs, and promote entrepreneurial learning in Limerick. These (education) partners in Limerick are mentioned in order to highlight how entrepreneurship is promoted and fostered at all levels of the education system by partners across Limerick.

What resources (e.g. financial, material, human, infrastructural) have been mobilized/used in order to implement the initiative?

Description of any innovative approaches used to mobilize/utilize resources in order to implement the initiative

This initiative comprises a range of support measures from the different partners, provided as part of a broad strategic collaboration. Each partner provides its own human and financial resources to deliver support. Together, these support measures assist people in progressing from unemployment to self-employment. The various support measures include the one-to-one advice, guidance and mentoring service provided by PAUL Partnership. Together, PAUL Partnership and LEO also provide a jointly funded Enterprise Training Programme to support small business start-ups in the city. PAUL Partnership also offers advice and guidance to both new and existing social enterprises across Limerick.

LEO provides a broad range of business support to assist microenterprise and small businesses at various stages of development, including financial support; management development guidance; mentoring; and business skills training. LEO is also the first point of contact through which all information on state support for small and microbusinesses can be accessed.

DSP's BTWEA and SEMP schemes encourage people receiving certain types of social welfare payments to become self-employed. Through its Enterprise Support Service, PAUL Partnership helps people to apply for the BTWEA and SEMP schemes. DSP also meets bi-monthly with PAUL Partnership to review business proposals.

In addition to the initiative described above, other stakeholders in the city provide independent entrepreneurial support to those seeking self-employment, including those benefiting from the support measures listed above. Education partners across Limerick foster a culture of enterprise and an ecosystem of entrepreneurial learning for all age groups, thus helping to break the cycle of intergenerational and long-term unemployment. Programmes/ initiatives include:

- LIT's Hartnett Enterprise Acceleration Centre, and the UL's Nexus Centre hosting innovative start-up companies;
- the UL and LIT Springboard+ programme modules (for those employed and unemployed) promoting entrepreneurial skills;
- MIC and LIT's EMPOWER programme for young people, and LEO's Student Enterprise programme; MIC also delivers programmes that develop entrepreneurship skills across all levels and continuous professional development (CPD) on entrepreneurial education for teachers;
- Limerick and Clare Education and Training Board's Skills to Advance programme, delivering courses to employees across all sectors; and apprenticeship and training initiatives fostering entrepreneurial skills;
- an annual Explore Engineering event for young students, promoting creativity, innovation and enterprise;
- education partners working closely with the Mid-West Regional Skills Forum and employers in response to identified skills needs, thereby enhancing employees' capacities;
- Ballyhoura Development CLG's Women's Rural Entrepreneurial Network (WREN), supported by Croom Community Enterprise Centre in collaboration with LIT.

How has the initiative been communicated?

What communication, outreach and advocacy methods have been used to mobilize stakeholders and/or engage target groups?

- The initiative has a strong focus on outreach and engagement, developing community-based providers and partners' capacity to promote these services.
- The stakeholders involved work together to communicate and promote this service widely among target groups and the long-term unemployed. They use their own tested communication channels, and communicate between partners at a strategic level.
- Target groups are identified and collaborative engagement strategies deployed in order to engage all relevant cohorts, including hard-to-reach disadvantaged groups.
- A range of working groups mobilizes communications and outreach for these services.
- The Enterprise Training Programme is advertised through local media, social media and DSP promotional events. A weekly jobs bulletin produced by PAUL Partnership also promotes the support offered by partners in this initiative.

How has the outcome/impact of the initiative been monitored?

Are there data-collection/ monitoring/ evaluation mechanisms in place to measure the outcome/impact of the initiative?

All agencies report on their outcomes and achievement of targets. For example:

- LEO reports on its KPIs to its funders, and undertakes both quantitative and qualitative evaluation.
- Limerick City and County Council's Local Community Development Committee works with local development companies to monitor annual targets, enterprise support measures and social enterprise.
- Local development companies refer clients to various statutory and voluntary services to support their needs, promoting access to formal and informal education, training and activation measures. They are thus supporting improved employability and enterprise.
- Ernst & Young (EY) compiles a bi-annual economic monitoring report for Limerick City and County Council, detailing new jobs and start-ups.
- Partner agencies conduct qualitative and quantitative evaluations of each of these initiatives.

- Follow up surveys are carried out annually with PAUL Partnership clients to assess their experience and determine whether their businesses are still trading and how they are performing, etc. Recent surveys have found that:
- two-thirds of the individuals who had become self-employed were still trading two to three or more years later; just under half (49%) of those still trading described their own business as performing either reasonably or extremely well;
- among survey respondents who were no longer trading, more than half closed their business between the first and second year of trading due to a lack of earnings/business viability, personal issues or because they had been offered full-time employment;
- there continued to be a strong need for networking opportunities;
- overall, responses were positive, with many people reporting that their sector and businesses were growing;
- support measures, including BTWEA, play an important role in helping people to enter self-employment and to manage a business during the initial stages.

Challenges and lessons learned?

Description of the obstacles/main challenges encountered and lessons learned while implementing the initiative

Challenges facing the development of entrepreneurship and small business start-ups among the target group include:

- issues related to procurement (young enterprises breaking into statutory processes), digitization (struggles with the move online and remote working), new trends affecting working and networking;
- high levels of social and economic disadvantage in the city, and multi-faceted aspects of social and economic deprivation in traditionally deprived areas;
- the challenges and support needs of small business start-ups (securing customers, competition, paperwork/managing the 'business side', funding);
- creating an enterprise culture that encourages young people from disadvantaged communities to start businesses (e.g. those with no intergenerational entrepreneurial background, etc.).

	<p>Lessons learned:</p> <ul style="list-style-type: none"> • Challenges will always be present, but the partners involved will continue to provide one-to-one advice, group training, networking and other forms of support to potential and new small business start-ups in order to enhance their long-term sustainability. • Support measures that provide security, including BTWEA, play an important role in helping people enter self-employment and manage a business through its initial stages. • Partners are jointly aware of the above challenges and work together to deal with them. • There is a need to keep pace with the future of work and the updated skills required. • The initiative requires a collaborative approach, dedicated resources (agency/coordination staff) and clearly defined formal roles.
<p>Further information and guidance?</p> <p><i>Advice to those interested in setting up a similar initiative, including links and email address for support</i></p>	<p>PAUL Partnership: https://www.paulpartnership.ie/sicap-enterprise-support/</p> <p>LEO: https://www.localenterprise.ie/Limerick</p> <p>PAUL Partnership events: https://www.localenterprise.ie/Limerick/Training-Events/PAUL-Partnership-Training-Programmes/</p> <p>BTWEA: https://www.gov.ie/en/service/f215a4-back-to-work-enterprise-allowance/</p> <p>Limerick & Clare Education & Training Board: https://learningandskills.ie/</p> <p>Springboard+: https://springboardcourses.ie</p>



Figure 8: Enterprise Training Event. Source: PAUL Partnership Local Development Company, Limerick



Figure 7: CTE NEXT event. Source: Torino Municipality Archive – Smart City Innovation Department



CONCLUSIONS AND A LOOK TO THE FUTURE

In light of the disruption and uncertainty resulting from demographic change, migration, the climate crisis, the rapid advance of technology and, more recently, the COVID-19 pandemic, learning cities are facing the need to redefine their role and proactively develop innovative learning environments that will empower people to face these changes. In order for learning cities to remain innovative and thus pave the way for social and economic development, they need to build on the concept of entrepreneurship education and on their residents' potential to learn (and unlearn).

In Chapter 3, Professor Zhang notes that the effective implementation of entrepreneurship education in learning cities depends on a variety of factors, including targeted government policies; financial support mechanisms for participation and synergies between relevant stakeholders and interest groups (especially between the public and private sectors); particular attention to disadvantaged groups; adequate learning resources (spaces and structures); appropriate learning models; and effective evaluation indicators.

The comparative study above has demonstrated that many cities are already working to foster and promote entrepreneurship education. The survey notes that the majority of these have implemented a strategic or guiding document focusing on entrepreneurship policy, as well as monitoring instruments or tools to evaluate their entrepreneurial work. Most also provide local start-ups with financial support, services and policies, and offer skills development and reskilling programmes to all citizens seeking employment, especially those from disadvantaged

groups (e.g. people living in deprived neighbourhoods, school drop-outs and the unemployed).

Despite the progress made by the majority of learning cities, several challenges remain and prompt cities to consider what further steps they might take to promote and develop entrepreneurship education.

First, more needs to be done to foster recognition and acceptance of entrepreneurship in learning cities. Cities need to invest in infrastructure and programmes that support a culture of entrepreneurship that will, in turn, generate enthusiasm for entrepreneurial activities among market players, and encourage young people from disadvantaged communities to start businesses.

Second, educational institutions must continuously adapt to the future of work and the updated skills this will require by strengthening and creating effective synergies between the private and public sectors.

Third, learning cities need to further recognize women's work in the family and community, such as child-rearing, home maintenance and volunteer activities, and develop effective strategies and incentives to support the promotion of women to leadership and management positions.

Finally, the study highlights the fact that city-level entrepreneurship initiatives have been implemented in different ways by different municipal authorities. If, however, we are to achieve real progress and build effective entrepreneurial learning cities, there is an urgent need for policy dialogue and the sharing of best practices among cities around the world.

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ACRONYMS AND CONCEPTUAL DEFINITIONS OF BASIC TERMS

UNESCO

United Nations Educational, Scientific and Cultural Organization

UIL

UNESCO Institute for Lifelong Learning

UNESCO Global Network of Learning Cities

The UNESCO Global Network of Learning Cities (GNLC) is an international policy-oriented network. It supports local governments in developing lifelong learning strategies, providing inspiration and expertise, and shares best practice. It was launched by the UNESCO Institute for Lifelong Learning (UIL) in 2012.

GNLC clusters

In order to further support collaboration among member cities on specific topics, UNESCO GNLC launched seven thematic clusters during the Fourth International Conference on Learning Cities in Medellín, Colombia, in 2019. The seven thematic clusters are: 1) education for sustainable development, 2) equity and inclusion, 3) educational planning, monitoring and evaluation, 4) global citizenship education, 5) entrepreneurship, 6) health and well-being, and 7) literacy.

Cluster on Entrepreneurship and Entrepreneurial Learning

The UNESCO GNLC cluster on Entrepreneurship and Entrepreneurial Learning consists of 25 cities. Chengdu (People's Republic of China) and Turin (Italy) are the two coordinating cities. It is further supported by the UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training in Bonn, Germany, and by the European Training Foundation (ETF) in Turin, Italy.

MEMBER CITIES OF THE UNESCO GNLC ENTREPRENEURSHIP CLUSTER

City	Country
Bamiyan	Afghanistan
Abovyan	Armenia
Sisian	Armenia
Vitebsk	Belarus
Živinice	Bosnia and Herzegovina
Manizales	Colombia
Escazú	Costa Rica
Chengdu	People's Republic of China
Espoo	Finland
Trikala	Greece
Cantarranas	Honduras
Hashtgerd Newtown	Iran
Mashhad	Iran
Yazd	Iran
Derry and Strabane	Ireland
Limerick	Ireland
Fermo	Italy
Turin	Italy
Atlixco	Mexico
Mineral de la Reforma	Mexico
Tecamachalco Centro	Mexico
Alcobaça	Portugal
Mação	Portugal
Saha-qu	Republic of Korea
Nikopol	Ukraine



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