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Conceptualization of the Learning Region: Evolution of the Approach and Theoretical Foundations

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Abstract: This article explores the concept of the learning region, focusing on its development and theoretical foundations. Through a literature review, it outlines the evolution of the learning region theory in relation to earlier related concepts and highlights current challenges. The following section deals with the theoretical foundations and also uses a synthesis to point out a typology of learning regions according to focus and management style.

Keywords: conceptualization, knowledge economy, learning region, regional development.

JEL classification: R58, O18, I25

Introduction

The concept of the learning region has attracted increasing attention in recent decades, particularly in the context of education development, innovation, regional policy, and the promotion of social cohesion. Especially in today's era of rapid economic and technological change, there is a growing need for flexible educational approaches that extend beyond formal education and engage society as a whole. In this context, a learning region is more than just a geographical entity - it represents a dynamic space of interaction among institutions, actors, and environments that collectively foster innovation, adaptability, and participatory governance (Glacová & Turečková 2024).

The theory of learning regions is one of several approaches addressing regional development and the factors that shape it. It emphasizes that a region's main development driver is its ability to learn, not as isolated economic actors but as a network of diverse regional stakeholders. Emerging in the 1990s, the theory highlights the importance of social groups and societal dynamics over purely market forces or global economic pressures. It underlines the role of learning, research, and innovation in generating new knowledge and strengthening shared values. However, successful regional development requires not only acquiring new knowledge but also effectively applying and sharing it within the region (Glacová & Turečková 2024).

This paper aims to trace the development of learning region theory from its origins to the present, highlighting its key theoretical foundations. Particular emphasis is placed on situating the concept within broader theoretical frameworks, including theories of learning, regional development, and the knowledge economy. The paper outlines the theoretical background of the learning region, charts its evolution, and discusses the core concepts associated with it. Based on the emerging theories, a model of the typology of learning regions according to focus and mode of governance is subsequently created through synthesis. The final section summarizes the main findings and proposes possible directions for future research and practical applications of the learning region concept in the context of contemporary society.

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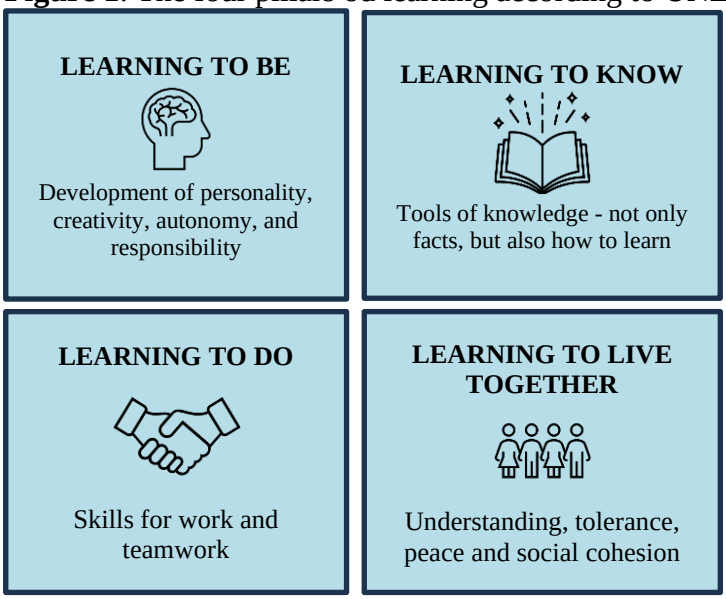
1 Development of the Theory

One of the ideological predecessors of the learning region concept - laying the foundation for understanding education as a tool for comprehensive, participatory, and lifelong development at all levels of society, including the regional level - is the 1972 publication Learning to Be: The World of Education Today and Tomorrow, also known as the Faure Report. The Delors Report of 1996, which followed and expanded on the pioneering ideas of the Faure Report, introduced a more systematic framework for education in the 21st century, with a direct impact on the development of learning cities and regions. It provides both an ideological and strategic foundation for the concept of the learning region by defining education as a lifelong, inclusive, and socially grounded process that is key to both individual and community development. The report also outlines four fundamental pillars that serve as a starting framework for educational policy and for concepts such as the learning region (see Figure 1).

Figure 1: The four pillars od learning according to UNESCO



Source: own elaboration based on the Delors Report (1996)

Learning regions are built upon three key processes: the creation and development of know-how (including human, structural, and social capital), collaboration among regional actors and the sharing of knowledge, and finally, the transfer of new know-how into practice, which promotes innovation, growth, and quality of life in the region (Kulhánek 2007). These processes are closely aligned with UNESCO's Four Pillars of Learning, highlighting their conceptual interconnection.

Another theoretical foundation of the learning region concept is the theory of regional competitiveness (as well as other theories of regional development). This theory relates to a given geographical area's ability to stimulate economic growth and enhance social prosperity through the effective use of its resources, institutions, and policies. It is a multidimensional concept encompassing economic prosperity, social well-being, and environmental sustainability (Kouskoura et al. 2024). It is important to recognize that disparities exist among regions. Some may struggle due to historical, geographical, or socio-economic challenges that hinder their capacity to compete effectively on a broader scale. Therefore, diagnosing and assessing the level of competitiveness, along with self-evaluation by individual regions, is essential for planning actions that support regional development and improve investment attractiveness (Chrobocinska 2023). Among the many observed key factors influencing regional competitiveness are educational infrastructure, human capital, and scientific,

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technological, and innovation capacity (Turečková et al. 2023). These factors form a direct link to the learning region theory.

The concept of the knowledge economy has also become a fundamental basis for the theory of the learning region. The knowledge economy represents an economic model in which traditional neoclassical production factors - such as labor, land, capital, and technology - are complemented by knowledge, which is assigned an increasingly significant role (Horký & Kouba 2014). This knowledge-based model marks a transformational shift in economic structures, emphasizing the importance of knowledge and intellectual capabilities over traditional physical resources. The concept of the learning region emerged as a response to the growing importance of knowledge in societal development, with a particular focus on the regional level. In this framework, the region is perceived as an environment that actively fosters the creation, sharing, and practical application of knowledge, thereby supporting skill development, innovation, and creativity. These elements - skills, creativity, and innovation - are viewed as essential components of both competitiveness and sustainable development. A knowledge economy is characterized by a high share of research and development (R&D), strong emphasis on the quality of education and digital skills, rapid circulation and commercialization of information, and intensive cross-sectoral cooperation (Turečková et al. 2023). With the increasing importance of intangible resources in development processes, attention is shifting toward skills, knowledge, qualifications, and behaviour, while the importance of natural resources is gradually diminishing. In the era of globalization, it is crucial for nations and companies to build their competitive advantage on these intangible resources, as well as on the ability of actors to cooperate and generate synergies - interdependencies that cannot be traded. Even these created resources require continuous updating, renewal, and processing of acquired knowledge. Learning processes play a key role, as they not only contribute to the generation of new insights but also facilitate the effective transfer of existing knowledge (Maillat & Kebir 2011). Knowledge thus becomes a key strategic resource, and learning is regarded as a crucial factor for maintaining long-term competitiveness (Blažek & Uhlíř 2011).

Related principles of the learning region can also be identified within the model of Regional Innovation Systems (RIS), which focus on structures and processes that support innovation and technological advancement in regions. A key principle of this concept is its emphasis on the natural potential and unique characteristics of each region. The aim is to foster endogenous economic and social development based on the use of local resources. However, this process must be enriched by external stimuli and knowledge inflows, which contribute to expanding opportunities and enhancing innovation (Adámek, Csank & Žížalová 2007). The RIS approach involves collaboration among businesses, research institutions, public authorities, and other regional stakeholders. In other words, a Regional Innovation System represents a network of actors, institutions, tools, and processes that collectively create an environment conducive to innovation within a specific region. The objective is to enhance regional competitiveness by supporting innovation, technological development, cooperation among stakeholders, and knowledge transfer. RIS can be understood as part of the broader innovation infrastructure of a region, encompassing institutions, tools, and mechanisms that promote innovation. It includes both the public and private sectors, with key roles played by universities, research organizations, innovation centres, technology parks, business incubators, clusters, startups, technology platforms, small and medium-sized enterprises (SMEs), and local public authorities - similar to the framework of the learning region theory (Glacová & Turečková 2024).

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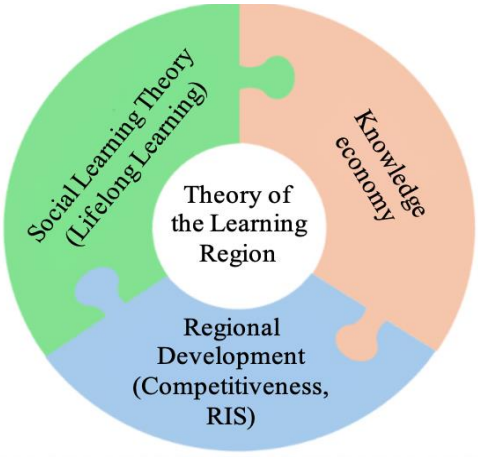
These actors are interconnected through networks and collaborative relationships that enable effective information exchange, resource sharing, and implementation of innovative projects. The public sector provides strategic frameworks, funding, and support through grant schemes and public policy instruments. These often include support for digitalization, green initiatives, and internationalization of businesses (Žítek 2015). The development of human capital, upskilling of the workforce, and educational programs focused on technological and managerial competencies are essential for ensuring the long-term sustainability and competitiveness of the region. One of the objectives of regional policy is to promote convergence, competitiveness, and employment, which directly aligns with the functioning of RIS. Financing innovation activities and structural reforms through regional development programs is crucial for the effective operation of RIS, which serves as a key tool for regional development (Viturka 2010). The resources allocated to support regional development are therefore not only an investment in specific projects but also contribute to the overall enhancement of regional innovation capacity, with spillover effects into many other areas. It is evident that the theories of learning regions and regional innovation systems share many common goals. RIS can be viewed as a practical implementation of strategies designed to help realize the vision of learning regions.

In conclusion, the concept of the learning region emerged at the intersection of several disciplines, most notably lifelong learning, knowledge economy theory, and regional development.

Figure 2: Fundamental Components of the Learning Region Concept



Source: own elaboration

The origins of the theory of the learning region are dated to the late 20th century. At that time, it was suggested that the modern economy was undergoing a transformation in which knowledge had become the most important resource for development. Learning thus became a necessary condition for the emergence of innovation. This involves not only individual education, but a collective process of sharing knowledge, experiences, and new approaches. The concept of educational or learning regions is based on the assumption that certain geographical areas can actively foster environments in which intensive cooperation among institutions, businesses, and communities takes place (Boekema 2000). Already in 1992, Lundvall pointed to the theory of innovation and interactive learning, which is closely linked to the concept of the learning region. Formally, the learning region was introduced at the end of the 20th century, for example, in 1995 by Richard Florida. In his research, the author analyses how regions become centres of specialized knowledge and innovation and emphasizes their role as "collectors and repositories of knowledge" in the era of knowledge-based capitalism. The original view, however, was focused on industrial areas (typically Silicon Valley), which were

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addressed by Asheim (1996). Subsequently, the theory expanded generally beyond the original industrial areas, and a more interconnected and innovative approach to economic development was proposed (e.g., Edquist 2001). Educational regions are not only about industrial production; they include a wider range of activities, including knowledge creation and the integration of various stakeholders such as universities, organizations, and individuals. This collaborative approach is essential for fostering an overall learning economy and highlights the importance of continuous learning and adaptation in a rapidly changing world. A learning region is an example of an innovative milieu that integrates three key paradigms: a technological paradigm emphasizing innovation and know-how; an organizational paradigm highlighting networks, competition, and cooperation; and a territorial paradigm focusing on proximity and regional dynamics. Its originality lies in viewing these elements as an integrated whole to understand economic development in its spatial and temporal context (Crevoisier 2004).

The idea of learning regions further developed in the European context, particularly after 2000 in connection with the Lisbon Strategy, which aimed to transform the European Union into the most dynamic and competitive knowledge-based economy in the world. Within this framework, the related concept of "knowledge regions" also emerged, emphasizing the importance of regions as centres of knowledge production, transfer, and application. Regions were seen as key actors in European cohesion policy, capable of promoting innovation through the integration of research, education, entrepreneurship, and public administration. The Organisation for Economic Co-operation and Development (OECD 2001) also contributed to the development and dissemination of this theory, publishing numerous analytical reports and policy recommendations on how to support regions as centres of learning and innovation, for example, in a series of documents on regional innovation systems, knowledge economies, and education (OECD 2002).

The concept of the learning region appears in the academic literature through several distinct but complementary approaches. One of them emphasizes the importance of inter-firm cooperation and knowledge sharing within regional networks as a key factor in the emergence and diffusion of innovation. In this view, the region is perceived as a space where collective learning forms the basis for strengthening economic dynamics and competitiveness. A second approach draws on ideas from evolutionary and institutional economics and views innovation as the result of continuous, interactive learning that is deeply embedded in the social and geographical context. The region thus is not just a location, but an active co-creator of the process in which knowledge is generated, shared, and transformed. A third perspective builds on practical experiences with organizational learning and participatory governance. In this framework, the learning region is understood as a partnership of various local actors that arises from the bottom up and strives for development through joint problem-solving, experience sharing, and capacity building at the community and institutional levels (Asheim 2009). This is also linked to cognitive proximity, which posits that geographical closeness alone is insufficient for effective collaboration. Actors also require a shared understanding and a similar knowledge base to exchange information, yet a balance must be struck - excessive cognitive proximity can cause stagnation, whereas a significant lack of it can prevent learning altogether (Boschma 1999).

Current societal developments are increasingly directed toward the advancement of technology and digitalization, which also impacts learning regions. Digitalization represents one of the key transformations fundamentally influencing the economy, society, and education at all levels. In the context of the learning region, digitalization becomes a tool for ensuring high-quality education, fostering innovation, and enhancing competitiveness. This transformation affects not

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only how people learn, but also the forms of interaction between regional development actors. This trend is especially important for regions with limited access to traditional educational institutions. For instance, in rural or remote areas, residents can benefit from online educational tools, thereby reducing educational inequalities between different regions. In the field of lifelong learning, digitalization is essential for providing access to additional educational opportunities for adults who need to adapt to new job requirements, especially in the context of rapid technological change. Digitalization also enables personalized learning. Modern technologies using artificial intelligence (AI) and data analysis can tailor educational content to students' individual needs. This allows for a more efficient and flexible educational process that takes into account the diversity of students and their specific learning needs. Another important aspect is digital infrastructure. Regions investing in the modernization of their digital infrastructure can better support online education, job opportunities, and innovation. This includes ensuring access to high-speed internet, which is necessary for the effective use of digital educational tools and for creating conditions conducive to regional development. Digital inclusion, that is, ensuring equal access to these technologies for all inhabitants of the region, is a cornerstone for achieving positive outcomes from digitalization.

A learning region is thus conditioned by its ability to effectively generate, share, and utilize knowledge in an environment that supports innovation, technological progress, cooperation, and infrastructure. This process forms the basis for the emergence of Society 4.0 – a socio-economic environment built on the principles of sustainability, circular economy, and environmental and social responsibility (Glacová et al. 2024). Sustainability in the context of learning regions means linking education with the long-term development of the community (Pakšiová & Turečková 2024). This approach includes environmental, social, and economic dimensions, which are interconnected. The vision is to create an environment in which people not only learn theoretically but also apply their knowledge in practice to address local challenges. In the Czech Republic, this approach is supported by various strategic documents. For example, the Czech Republic's Education Policy Strategy to 2030+ emphasizes the importance of integrating sustainable development into educational processes. This document highlights the integration of environmental, social, and economic aspects of development at local, national, and global levels (MŠMT 2020).

2 Theoretical Framework of the Learning Region Theory

The theory - or also the concept - of the learning region is closely linked to the idea of lifelong learning. It is focused not only on the economic, but also the social and environmental future of both people and places. At the core of intelligence, creativity, knowledge, and innovation lies effective learning and its appropriate application in the future (Longworth & Osborne 2010). However, this concept entails more than just support for education or the mere interconnection of educational institutions within a given area, which the term itself might suggest. A learning region is understood as a process wherein all regional subsystems and institutions are interconnected with the aim of mutual learning and innovation. The most critical measures focus on the development of human capital and the support of networking based on trust, which facilitates cooperation both within and between regions (Kulhánek 2007). Innovations therefore emerge from networks of interconnected actors within the region, rather than in isolation within individual enterprises (Šilhánková 2007). Regions are not considered static but are seen as entities in continuous development, adapting to new challenges and opportunities. This flexibility and responsiveness to changing conditions are essential for their long-term success. Regions that foster creativity and innovation are more capable of facing competition and global challenges (Hudson 1999). In today's economy - often referred to as the “knowledge-based economy” or the “new learning economy” - knowledge plays a pivotal role,

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becoming the main source of value creation, the driving force behind innovation, and a fundamental factor in maintaining competitiveness and economic growth (Kulhánek 2007).

Understanding the theoretical framework first requires a clear definition of the term "region" as the central space where these processes unfold. The region can be understood in various ways depending on context; hence, it is essential to clarify the meaning attributed to it within this theory. A region can be generally defined as a spatial unit delineated based on specific functional interconnections (particularly in the case of urbanized areas) or shared characteristics, such as natural, physical-geographical, climatic, socio-economic, linguistic, or ethnic traits (Šilhánková 2007). Thus, a region is not merely a geographically bounded space, but also a socially constructed entity whose identity is shaped over time through the cultural, social, economic, and historical experiences of the community that inhabits it (Cejpová 2018). In the context of the learning region, a region may be understood as a dynamic and adaptive entity that continually evolves through the interactions of various stakeholders - local communities, businesses, research institutions, and public authorities. Such a region is defined by its capacity for learning, innovation, and adaptation to changing conditions. It is a space where continuous knowledge transfer, innovation, and capacity building take place on both individual and collective levels. In simplified terms, a region in this context can be viewed as a territorial unit that actively engages in learning and innovation processes to enhance its competitiveness and ability to adapt. The specific territorial delineation may vary - from a particular city or district to a state or even a group of countries.

For the effective development of a learning region, collaboration among involved institutions is essential, forming a fundamental component of the concept. The interconnectedness of businesses and other organizations within the region facilitates access to resources and information and enhances their ability to quickly adapt to change (Blažek & Uhlíř 2011). Among the key actors that play a major role in regional development are businesses, educational institutions, government bodies, and other non-governmental organizations. In relation to the learning region, the concept of the creative class also arises. According to Florida (2002), the creative class significantly contributes to regional development. This class includes groups of people who contribute to economic growth by transforming their ideas, visions, and knowledge into innovations and technological development. Creativity is considered their primary working tool (Florida 2002). The theory of the creative class stems from the belief that economic growth primarily depends on people and their creativity, rather than on firms. Florida (2019) also argues for investing in the creation of environments and services that support the life and work of creative individuals, rather than channeling resources into supporting specific companies. Focusing on individual actors, businesses are the central point of a learning region. To enhance competitiveness, they utilize intangible resources such as skills and know-how and actively engage in cooperative practices to develop synergies and share knowledge that is vital for innovation (Asheim, n.d.). Universities and research institutions also play a key role in regional development through research, education, and training of a skilled workforce. They serve as knowledge hubs that facilitate the transfer of new ideas and technologies to the business sector. Other participants include government institutions, i.e., local and regional governments, which foster regional development by creating policies that support cooperation among actors, financing projects, and providing infrastructure that enables innovation (Rutten & Boekema 2007). Nijkamp (2004) suggests that creating a learning-friendly environment - through investments in education, research, and development - can significantly improve regional economic performance. Policymakers are therefore motivated to develop strategies that encourage collective learning and knowledge exchange. Other organizations, such as non-profits and community groups, contribute to social innovation and local development, ensuring

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that learning processes are inclusive and reflect the needs of diverse population groups (Maillat & Kebir 2011). These entities help mobilize local resources and promote a culture of learning and cooperation among residents - critical elements for ensuring regional development. While the learning region concept primarily emphasizes the importance of local actors, it is important to recognize that learning processes also occur at national and international levels. This broader perspective underscores the interconnectedness of regions within global networks and highlights that learning is not confined by geographic boundaries (Lagendijk 2001).

In the context of the learning region, institutions play a key role as they are the primary actors supporting and directing the processes of learning and innovation. Hudson (1999) identifies several institutional functions in such regions:

- Support for education and research: Institutions such as universities, research institutes, and training centers play a decisive role in providing knowledge and new technologies essential for economic growth and innovation.
- Fostering cooperation: Regional institutions, including governmental and non-governmental organizations, facilitate collaboration between businesses, academia, and the public sector, leading to effective knowledge and innovation transfer.
- Policy and strategy development: They create policy frameworks and strategies that enhance regional competitiveness through investments in infrastructure, research, and innovation, enabling regions to adapt to changing global conditions.
- Regulation and stability: Institutions ensure the stability and regulations that provide businesses and individuals with a framework for sustainable development and the implementation of technological and process innovations.
- Support for an innovative ecosystem: Institutions support innovation and entrepreneurship not only through funding but also by providing networking opportunities, mentoring, and access to necessary expertise.

Institutions are therefore indispensable to the coordination and support of processes that lead to the long-term adaptation, competitiveness, and success of a region.

A further key mechanism of regional development arising from interactive learning and cooperation among economic actors is innovation. The learning region concept emphasizes that innovation is not the isolated product of individual firms, but the outcome of complex interactions within a regional ecosystem (ČSÚ 2007). According to the Czech Statistical Office, innovation represents a deliberate change initiated by humans, encompassing the introduction of new or significantly improved products to the market and into production, modernization of production processes, implementation of new organizational structures in work and production management, or the adoption of new management methods - at least at the enterprise level. A current topic of interest is primarily technological innovation, driven by digitalization. Digitalization is occurring not only within businesses but also in regions and local governments themselves. Through technological advancement, these actors enhance their competitiveness, improve quality of life, and move closer to the model of so-called smart cities. Smart cities use modern innovations to ensure efficient management of urban areas, improve residents' quality of life, and promote sustainable development. They represent a new economic domain where new markets or market segments can be developed, offering innovative and intelligent (both tangible and intangible) solutions for cities and regions (Turečková & Nevima 2020). Evolving technological innovations such as the Internet of Things (IoT), big data, and artificial intelligence (AI) play a crucial role - not only in smart cities - but also in regional learning and innovation. These technological advances are part of a broader trend transforming how regions learn and innovate. They enable cities and regions to rapidly adapt to changing conditions,

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thereby enhancing their competitiveness and preparedness for future challenges. From the perspective of a learning region, this technological development signifies not only improved infrastructure and services but also an increased ability of regions to innovate, learn, and grow.

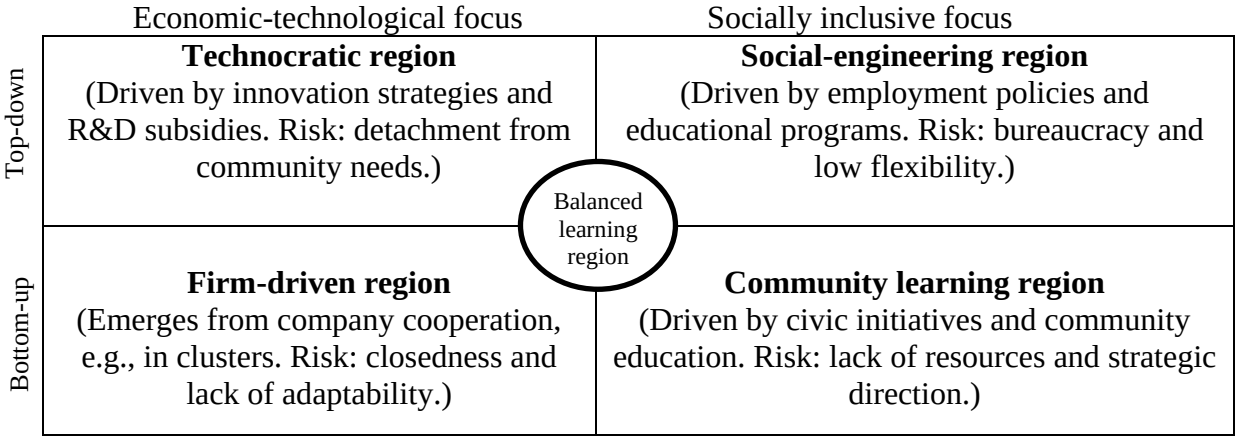
The future of learning regions will be shaped not only by technological innovation but also by their ability to adapt to new social, economic, and political challenges. The key to success will lie in flexibility, collaboration, investment in education and technology, and ensuring sustainability and equity. Regions that can swiftly respond to change will be not only more competitive but also more resilient in the face of future challenges. A learning region supports the emergence of a knowledge economy and, through the integration of Industry 4.0 elements into the socio-economic environment, creates the so-called Society 4.0 (Glacová & Turečková 2024).

3 Synthetic framework: Typology of learning regions

The previous overview showed that the concept of a learning region emerges at the intersection of several theoretical streams. These streams reveal two fundamental tensions or dimensions that define the character and direction of each region: Primary focus of development activities (Focus): On one side, there is an emphasis on economic-technological development, connected to concepts such as Regional Innovation Systems (RIS), competitiveness, and the knowledge economy. On the other side, there is an emphasis on socially inclusive development, inspired by ideas of lifelong learning, social cohesion, and sustainability, as presented for example in UNESCO reports. Dominant mode of governance (Governance): Development processes can be initiated and led either from the top down, through formal policies, strategies, and public institutions, or they can grow organically from the bottom up, through networks of relationships, business cooperation, and community initiatives.

Based on the analysed theoretical approaches, it is possible to propose a typology that helps to better understand different forms of learning regions. The ideal learning region is located somewhere in the middle, where it can balance all four dimensions: it combines economic dynamism with social cohesion and effective strategic governance with flexible local cooperation. The balanced learning region is thus the point in the centre of the model. This model does not represent a strict categorization but serves as a tool for better understanding various forms of regions and the challenges they face.

Figure 3: Typology of learning regions



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Technocratic region (Top-Down / Economic-technological): This type represents a region governed by central innovation strategies and funding programs focused on R&D and technology. Although it can be effective in mobilizing resources, its main risk is detachment from the real needs of local communities and businesses, leading to low project sustainability. It can also be understood as a planned region, where innovation strategies and subsidies are the main tools.

Social-engineering region (Top-Down / Socially inclusive): Here, centrally managed employment policies and standardized educational programs dominate. The aim is social cohesion and equal opportunities, but the main risk lies in bureaucracy, low flexibility, and the inability to respond to specific local conditions.

Firm-driven region (Bottom-Up / Economic-technological): This type is characterized by organic cooperation among firms within clusters, where learning happens informally. Its strength lies in flexibility, but the main threat is "lock-in"—over-specialization and closedness to new external impulses, which reduces long-term adaptability.

Community learning region (Bottom-Up / Socially inclusive): Development here is driven by civic initiatives and community projects focused on quality of life and social cohesion. Although this model is highly engaged and legitimate, its risks include a lack of financial resources, fragmentation, and absence of strategic direction.

As the model suggests, none of these "pure" types is ideal. The ideal or balanced learning region is rather a dynamic goal, situated in the centre and striving to effectively combine strategic governance (Top-Down) with local initiative (Bottom-Up), while harmonizing the need for economic competitiveness with social cohesion. This typology thus allows not only for the classification of existing approaches but also for identifying key challenges for the future development of regional policies.

Conclusion

The concept of the learning region emerged through the integration of several theories, including lifelong learning, the knowledge economy, and regional development, with an emphasis on the creation, sharing, and utilization of knowledge within regions. Learning regions support the exchange of knowledge, skills development, and innovation, thereby enhancing economic dynamism. A key element is the development of Regional Innovation Systems (RIS), which connect businesses, research institutions, and public entities, contributing to regional development and increasing competitiveness.

The selected theory is linked to lifelong learning and regional development, focusing on connecting institutions and actors to support innovation, adaptability, and competitiveness. A crucial aspect of this process is the development of human capital, trust-based networking, and the promotion of collaboration among businesses, educational institutions, governmental and non-governmental organizations. Learning regions continuously evolve and respond to changing challenges, with technological innovations such as the Internet of Things (IoT), big data, and artificial intelligence playing an increasingly important role in improving infrastructure and adapting to new conditions. A current topic is digitalization, which significantly impacts the economy, society, and education. In the context of learning regions, it can serve as a tool to ensure high-quality education, innovation, and competitiveness. Digitalization provides access to educational opportunities even in regions with limited access to traditional institutions, such as rural areas, and supports lifelong learning and adaptation to

new labour market requirements. At the same time, emphasis is placed on sustainability, which links education to the long-term development of communities, encompassing environmental, social, and economic dimensions. This approach is also supported by strategic documents, such as the Czech Republic's Education Policy Strategy to 2030+, which highlights the integration of sustainable development into educational processes. The strategy aims to shape responsible and active citizens who understand complex social structures. A key component of this goal is the field of sustainable development, whose 'cross-cutting reflection and consideration within the forms and methods of education is an essential prerequisite for understanding the interconnectedness and mutual links of economic, social, and environmental aspects of development.' By acquiring the knowledge and skills necessary to promote a sustainable way of life, individuals learn to perceive problems and opportunities in their full complexity - from the local to the global level. Education conceived in this way, which emphasizes interconnectedness and systems thinking, subsequently creates an ideal foundation for strengthening actors within learning regions. It is precisely the ability to perceive local challenges in a broader context and to collaborate on sustainable solutions that is the essence of dynamic and innovative regional development (MŠMT 2020).

In this context, institutions that support education, research, and create policy frameworks for innovation are key actors. Regions focused on innovation and technological development (as exemplified by Smart Cities) are better positioned to address global challenges and ensure sustainable development. The future of these regions will depend on their ability to respond flexibly to social, economic, and technological changes. Given the rapidly evolving societal, technological, and environmental conditions, the concept of the learning region remains highly relevant and opens up numerous avenues for further research, such as digital transformation, smart regions, or green transformation.

The overview showed that the concept of a learning region emerges at the intersection of several theoretical streams, revealing two key dimensions: focus (economic-technological vs. social-inclusive) and governance (top-down vs. bottom-up). As a result, four types of regions can be identified, each with specific strengths and risks. The ideal learning region balances these dimensions to combine economic dynamism, social cohesion, strategic direction, and local initiative.

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