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Competencies of the Future in the European Union

Administrative, Educational, and Commercial Perspectives



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Competencies of the Future in the European Union.

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Introduction

The concept of competence originates from the Latin term *competentia* and is commonly understood as the ability to perform tasks effectively or to apply a defined set of knowledge and skills within a professional context. In today's global economy, profound transformations driven by rapid technological advancement, globalization, and evolving social dynamics are reshaping labor markets and organizational structures. These developments demand a workforce equipped with advanced and adaptable competencies capable of responding to complex and uncertain environments.

Within the European Union, the development of future-oriented competencies has become a central element of strategic policymaking. The EU views skills development as essential for maintaining global competitiveness, fostering innovation, and ensuring social cohesion. This article explores the notion of competencies of the future—often referred to as Competencies 4.0—and examines their relevance across administrative, educational, and commercial sectors. Particular attention is given to how these competencies are embedded within EU strategies and how Ireland aligns its national approach with broader European objectives.

Understanding Competencies of the Future (Competencies 4.0)

Competencies of the future encompass the skills, knowledge, and abilities required to thrive in a technology-driven and rapidly changing environment. Unlike traditional skill sets that focus primarily on technical expertise, Competencies 4.0 emphasize a broader and more integrated profile. Core elements include critical thinking, problem-solving, adaptability, creativity, collaboration, and digital literacy.

The EU recognizes these competencies as fundamental in responding to the challenges posed by Industry 4.0, a paradigm characterized by automation, artificial intelligence, data-driven systems, and digital interconnectivity. As technological systems increasingly influence decision-making and organizational processes, human competencies must evolve to complement and guide these technologies. Competencies 4.0 therefore represent a shift from task-based skills toward holistic, hybrid capabilities that integrate technical and socio-emotional dimensions.



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European Union Policy Frameworks for Future Competencies

To support the development of future-oriented skills, the EU has established an extensive policy framework. Initiatives such as the European Skills Agenda, the Digital Education Action Plan, and the New Industrial Strategy for Europe reflect a long-term commitment to preparing citizens for a digital and sustainable economy. These initiatives emphasize lifelong learning, workforce upskilling and reskilling, digital transformation, and social inclusion.

A key objective of these policies is to ensure that all individuals—regardless of age, background, or socio-economic status—can benefit from emerging opportunities. By embedding competencies development into education systems, public administration, and industry, the EU seeks to create a resilient workforce capable of adapting to continuous change. These policies significantly influence how administrative, educational, and commercial sectors across member states approach workforce development and organizational transformation.

Trends and Drivers Shaping Competency Development

The development of future competencies is closely linked to broader global and European trends. Among the most influential drivers are the increasing role of artificial intelligence, the transition toward a green and sustainable economy, demographic changes, and the growing importance of social and emotional skills in the workplace.

Strategic frameworks such as the European Green Deal and the Pact for Skills provide guidance on aligning skills development with environmental sustainability and inclusive growth. These initiatives highlight the need for competencies that support green innovation, digital responsibility, and ethical decision-making. As work environments become more complex and interdisciplinary, the demand for adaptability, collaboration, and systems thinking continues to grow across all sectors.

Ireland's Alignment with the EU Competency Framework

As an EU member state, Ireland has actively aligned its national policies with the European competencies framework. This alignment reflects Ireland's strategic focus on innovation, digital transformation, and the development of green skills. In the administrative sector, digitalization initiatives have enhanced efficiency, transparency, and service delivery. Public administration increasingly relies on data literacy, digital governance, and change management competencies.



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Within the educational sector, Ireland has prioritized curriculum modernization to better reflect emerging labor market demands. Emphasis is placed on digital skills, interdisciplinary learning, and lifelong education pathways. The commercial sector—dominated by small and medium-sized enterprises (SMEs) as well as multinational corporations—plays a crucial role in implementing EU skills policies in practice. While Ireland has achieved notable progress in integrating future competencies into national strategies, ongoing challenges remain in ensuring consistent implementation and equitable access to upskilling opportunities.

Theoretical Foundations of Future Competencies

Understanding competencies of the future requires a strong theoretical foundation. Several theoretical perspectives inform the EU's approach to skills development. Human capital theory emphasizes the economic value of skills and knowledge as drivers of productivity and growth. Socio-constructivist theories highlight the importance of collaborative learning, adaptability, and continuous skill development in dynamic environments. Systems theory underscores the interconnected nature of education, policy, labor markets, and industry.

Together, these frameworks provide a comprehensive lens through which competencies of the future are conceptualized and operationalized. They support a shift away from isolated skill acquisition toward integrated systems of learning that respond to technological, economic, and social change.

Comparative Approaches Across EU Member States

EU member states adopt diverse approaches to developing future competencies, shaped by their economic structures, educational traditions, and cultural contexts. Comparative analysis reveals valuable insights into best practices and areas for improvement. For example, Germany is widely recognized for its strong vocational education and training system, which effectively integrates industry needs with education pathways. Finland, on the other hand, is known for innovative educational practices that emphasize creativity, learner autonomy, and digital competence.



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By examining these approaches, valuable lessons emerge for Ireland and other member states seeking to refine their strategies and strengthen alignment with EU priorities. Comparative learning supports policy innovation and enhances the collective capacity of the EU to respond to future workforce challenges.

Industry 4.0 and the Rise of Hybrid Competencies

The transformative impact of Industry 4.0 is reshaping workforce requirements across the EU. This transformation highlights the growing importance of hybrid competencies that combine technical expertise—such as IT knowledge, data analysis, and software development—with essential soft skills, including communication, teamwork, adaptability, and critical thinking (Lenarčič, 2019; Jurburg & Cabrera, 2019; Beke et al., 2020).

Despite increased awareness of these needs, a persistent mismatch remains between higher education outcomes and labor market demands (Walaszczyk, 2022; Alhloul & Kiss, 2022). In response, innovative strategies such as “learning factories” have emerged, integrating practical training into educational programs and strengthening collaboration between industry, governments, and educational institutions (Kipper et al., 2021).

The concept of Competencies 4.0 has gained prominence as a guiding framework for workforce readiness. Initially emerging from Germany’s high-tech Industry 4.0 strategy launched in 2011, it has since expanded across disciplines including education, human resources, management, and psychology (Poszytek, 2021). In sectors such as ICT and agro-industry, the demand for interdisciplinary knowledge and socio-emotional competencies continues to grow, reflecting the increasing integration of technology with broader socio-economic systems (Rawboon et al., 2021; Gudanowska, 2017).

Conclusion

Competencies of the future represent a dynamic and interdisciplinary response to the challenges of the fourth industrial revolution. Within the European Union, these competencies are central to policy development, workforce transformation, and long-term socio-economic sustainability. By integrating technical, cognitive, and social skills, Competencies 4.0 offer a comprehensive framework for preparing individuals and organizations for an uncertain and rapidly evolving future. As demonstrated through EU initiatives and national strategies such as those in Ireland, the successful development of future competencies depends on coordinated action across education, administration, and industry.



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