

Comparing EU Regulations in the Field of Digital Competences and Practices in Different Countries

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Abstract. Digital competences have become a strategic priority for the European Union in the context of digital transformation, labour market restructuring, public service digitalisation and the rapid development of artificial intelligence. The EU has created a complex regulatory and policy framework that includes the Digital Decade Policy Programme 2030, DigComp 2.2, DigCompEdu, the Digital Education Action Plan 2021-2027, Council recommendations on digital skills, and the Artificial Intelligence Act. However, the practical implementation of these instruments differs significantly among EU Member States. The objective of this article is to compare EU regulations in the field of digital competences with national practices in selected countries and to identify the factors that influence differences in digital competence outcomes. The study applies qualitative comparative policy analysis, document analysis and secondary statistical analysis. The research is based on official EU regulatory and policy documents, Eurostat data, and selected national practices from Finland, Denmark, the Netherlands, Ireland, Estonia, Spain, Germany, Romania and Bulgaria. The results show that EU regulation has established a common conceptual and strategic framework for digital competence development. Nevertheless, national outcomes remain uneven. Countries with strong education systems, developed digital public services, effective lifelong learning policies and high labour market demand for digital skills demonstrate better results. In contrast, countries with weaker digital infrastructure, lower participation in adult learning and stronger socio-economic inequalities remain below the EU average. The study also shows that AI literacy is becoming a new and essential component of digital competence regulation. EU digital competence policy is moving from general skills development toward an integrated governance model combining education, labour market policy, public administration, inclusion and technological regulation. Further research should focus on the effectiveness of national digital skills strategies, the assessment of AI literacy, the reduction of digital divides, and the impact of digital competence policies on employability and social inclusion.

Keywords: digital competences; digital skills; European Union; DigComp; DigCompEdu; Digital Decade; digital education; AI literacy; digital inclusion; lifelong learning; digital public services; comparative policy analysis.

JEL Classification: O33; I23; I25; J24; H83

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Introduction. Digital competence has become one of the core preconditions for economic competitiveness, social inclusion, democratic participation and individual security in the European Union. The digital transformation of public services, education, labour markets and business models requires citizens not only to use digital tools, but also to understand, evaluate and create digital content, protect personal data, communicate responsibly, and adapt to new technologies such as artificial intelligence. Therefore, digital competence is no longer interpreted as a narrow technical ability. It is increasingly understood as a multidimensional competence that combines knowledge, skills, attitudes, ethical awareness and critical thinking.

The European Union has developed a coherent policy and regulatory framework for digital competences. This framework includes the Digital Decade Policy Programme 2030, the Digital Education Action Plan 2021-2027, the Digital Competence Framework for Citizens, known as DigComp, the European Framework for the Digital Competence of Educators, known as DigCompEdu, and the Council recommendations on digital education and digital skills. More recently, the Artificial Intelligence Act has introduced the concept of AI literacy, thereby expanding the meaning of digital competence to include the responsible use and understanding of AI systems.

At the same time, the implementation of these EU-level frameworks differs considerably between Member States. Some countries, such as the Netherlands, Ireland, Denmark and Finland, have already exceeded the EU target of 80% of citizens with at least basic digital skills. Other countries, including Romania and Bulgaria, remain significantly below the EU average. These differences show that EU regulations and frameworks create common standards, but national practices, education systems, digital infrastructure, public administration models and lifelong learning policies determine the real level of digital competence development.

The relevance of this topic is strengthened by the fact that, according to Eurostat, in 2025 only 60% of EU citizens aged 16 to 74 had at least basic digital skills, while the EU target for 2030 is 80% (Eurostat, 2026). This means that the European Union still faces a substantial gap between strategic goals and actual outcomes. The comparative analysis of EU regulations and national practices is therefore necessary to identify effective policy models and understand why some countries progress faster than others.

Literature review. The academic and policy literature on digital competences in the European Union has developed around several interconnected concepts: digital literacy, digital skills, digital competence, digital citizenship and digital inclusion. Earlier approaches often focused on operational skills, such as the ability to use computers and the internet. More recent research and policy frameworks interpret digital competence as a broader capacity to participate safely, critically and creatively in digital environments.

A central reference point is the Digital Competence Framework for Citizens. DigComp provides a common European understanding of digital competence and identifies five competence areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem solving (Vuorikari et al., 2022). The updated DigComp 2.2 framework includes more than 250 examples of knowledge, skills and attitudes, with particular attention to new and emerging technologies, including artificial intelligence, misinformation and data-driven environments (Vuorikari et al., 2022).

The development of DigComp followed earlier work on proficiency levels and practical examples. DigComp 2.1 introduced eight proficiency levels, which allowed digital competence to be measured and applied in education, employment and lifelong learning contexts (Carretero et al., 2017). This approach is important because it transforms digital competence from a general policy concept into a measurable and assessable learning outcome. A related framework is DigCompEdu, which focuses on the digital competence of educators. It defines what it means for teachers and trainers to be digitally competent and identifies educator-specific competences related to professional engagement, digital resources, teaching and learning, assessment, empowering learners, and facilitating learners' digital competence (Redecker & Punie, 2017). The importance of DigCompEdu lies in the fact that citizens' digital competence cannot be developed effectively without digitally competent educators.

The broader EU policy framework is also based on the Council Recommendation on Key Competences for Lifelong Learning, where digital competence is one of the eight key competences necessary for personal fulfilment, employability, active citizenship and social inclusion (Council of the European Union, 2018). This confirms that digital competence is not limited to the labour market. It is also linked to citizenship, inclusion and democratic participation.

The Digital Education Action Plan 2021-2027 further develops this policy direction. It establishes two strategic priorities: the development of a high-performing digital education ecosystem and the enhancement of digital skills and competences for digital transformation (European Commission, 2020). The plan emphasises infrastructure, connectivity, teacher training, high-quality digital content, and digital skills for all citizens.

The Digital Decade Policy Programme 2030 gives digital competence a measurable strategic dimension. It sets the target that at least 80% of people aged 16 to 74 should have at least basic digital skills by 2030, and that the EU should reach 20 million employed ICT specialists while promoting women's participation in the sector (European Parliament & Council of the European Union, 2022). This programme is significant because it links digital competences to the EU's wider transformation agenda, including

public services, business digitalisation, digital infrastructure and technological sovereignty.

The 2023 Council Recommendation on improving the provision of digital skills and competences in education and training strengthens the role of national education systems. It calls on Member States to improve digital skills from early education to adult learning, support teachers, promote high-quality informatics education, and address digital divides (Council of the European Union, 2024). This recommendation reflects the understanding that digital competence development must be systematic and lifelong.

A newer regulatory development is the Artificial Intelligence Act. Article 4 of the AI Act requires providers and deployers of AI systems to ensure a sufficient level of AI literacy among staff and other persons dealing with AI systems on their behalf (European Parliament & Council of the European Union, 2024). This provision expands the digital competence agenda from general digital skills to specific knowledge about AI risks, opportunities and responsible use.

Taken together, the literature and policy documents show that EU digital competence regulation has evolved from a skills agenda into a complex governance framework. It combines education policy, labour market policy, technological regulation, social inclusion and ethical requirements.

Aims. The aim of this article is to compare EU regulations and policy frameworks in the field of digital competences with national practices in selected EU countries, and to identify factors that explain differences in digital competence outcomes.

The objectives of the article are:

1. To analyse the main EU regulations, recommendations and frameworks related to digital competences.
2. To compare statistical indicators of digital competence across EU Member States.
3. To examine selected national practices in countries with different levels of digital skills development.
4. To identify common features of successful national approaches.
5. To define key challenges that limit the achievement of the EU Digital Decade targets.
6. To formulate conclusions on how EU regulatory convergence can be combined with national policy diversity.

Methodology. The article is based on qualitative comparative policy analysis and secondary statistical analysis. The research design combines document analysis, comparative analysis and interpretation of official statistical data.

The document analysis covers EU legal and policy documents, including the Digital Decade Policy Programme 2030, the Digital Education Action Plan 2021-2027, DigComp 2.2, DigCompEdu, the Council

Recommendation on Key Competences for Lifelong Learning, the Council Recommendation on improving the provision of digital skills and competences in education and training, and the Artificial Intelligence Act.

The statistical analysis uses Eurostat data on individuals with at least basic digital skills, ICT specialists, gender differences, age differences and education-related digital divides. The main indicator used is the share of individuals aged 16 to 74 with basic or above basic overall digital skills.

The comparative country analysis focuses on selected EU Member States representing different models of digital competence development. Finland, Denmark, the Netherlands and Ireland are considered high-performing countries because they have already exceeded the 80% target. Estonia is analysed as a digitally advanced public service model. Spain is examined as an example of a structured national digital skills plan. Germany is included because of its federal model and large-scale investment in school digitalisation. Romania and Bulgaria are considered countries with lower levels of basic digital skills.

The methodological logic of the research is based on a последовательный analytical framework that begins with the examination of the EU regulatory and policy framework. This is followed by the analysis of digital competence indicators using Eurostat data. The next stage involves a comparison of national practices across EU countries, which enables the identification of key success factors and existing barriers. Based on these findings, the study formulates policy conclusions. This methodology allows the article to connect formal EU-level regulation with real national outcomes.

Results. The EU regulatory framework in the field of digital competences is not limited to one legal act. It consists of interconnected legal, strategic and methodological instruments.

Table 1. Main EU instruments regulating and supporting digital competences

EU instrument	Year	Main contribution to digital competence policy
Council Recommendation on Key Competences for Lifelong Learning	2018	Recognises digital competence as one of the eight key competences for lifelong learning
DigComp 2.1	2017	Introduces eight proficiency levels and examples of use
DigComp 2.2	2022	Updates competence examples, including AI, misinformation, data and safety
DigCompEdu	2017	Defines digital competence requirements for educators
Digital Education Action Plan 2021-2027	2020	Establishes EU priorities for digital education and digital skills
Digital Decade Policy Programme 2030	2022	Sets measurable EU targets, including 80% of citizens with basic digital skills
Council Recommendation on digital skills and competences in education and training	2023	Calls for systematic digital skills provision in education and training
Artificial Intelligence Act	2024	Introduces AI literacy obligations for providers and deployers of AI systems

Source: compiled by the author based on (Council of the European Union, 2018; Carretero et al., 2017; Vuorikari et al., 2022; Redecker & Punie, 2017; European Commission, 2020; European Parliament &

Council of the European Union, 2022; Council of the European Union, 2024; European Parliament & Council of the European Union, 2024)

The EU model can therefore be described as a layered governance system. The strategic layer is represented by the Digital Decade and the Digital Education Action Plan. The methodological layer is represented by DigComp and DigCompEdu. The educational layer is represented by Council recommendations. The regulatory layer is strengthened by the Artificial Intelligence Act, especially in relation to AI literacy.

Statistical comparison of digital competences in EU countries.

Eurostat data show that the EU is progressing, but not fast enough to reach its 2030 target without additional policy measures. In 2025, 60% of EU citizens aged 16 to 74 had at least basic digital skills. This figure was 20 percentage points below the 2030 target of 80% (Eurostat, 2026).

The differences between Member States are substantial. The Netherlands reached 84%, Ireland 83%, and Denmark and Finland 81%. These countries have already achieved the EU target. At the other end of the scale, Romania reached 32% and Bulgaria 38% (Eurostat, 2026).

Table 2. Selected EU countries by share of population with at least basic digital skills, 2025

Country	Share of people aged 16-74 with at least basic digital skills	Position in relation to EU 2030 target
Netherlands	84%	Above target
Ireland	83%	Above target
Denmark	81%	Above target
Finland	81%	Above target
EU average	60%	Below target
Bulgaria	38%	Significantly below target
Romania	32%	Significantly below target

Source: Eurostat, 2026

The data also reveal important socio-demographic differences. In 2025, 82% of people with higher formal education had at least basic digital skills, compared with 38% of people with low formal education (Eurostat, 2026). Age is another important factor. Younger age groups have much higher levels of digital skills than people aged 65 to 74. Labour market status is also relevant, because students and employed persons demonstrate higher levels of digital skills than retired or inactive persons.

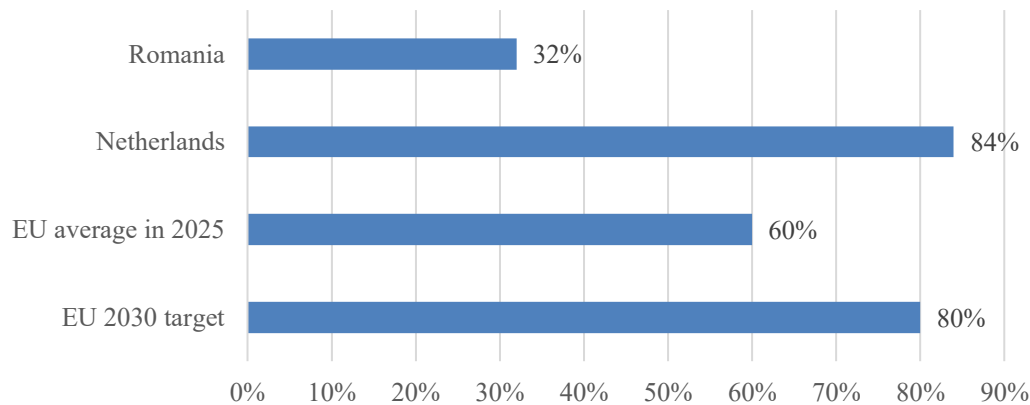


Figure 1. EU digital competence gap in 2025

Source: European Commission (2023); Eurostat (2024)

The gender dimension is more complex. In the EU as a whole, men had a slightly higher share of at least basic digital skills than women, but among younger age groups women often performed better. However, the ICT specialist labour market remains strongly gender imbalanced. In 2025, women accounted for only 19.5% of ICT specialists in the EU (Eurostat, 2026). This indicates that basic digital skills and advanced professional digital specialisation should be analysed separately.

Finland. Finland represents a strong education-centred model of digital competence development. Digital skills are integrated into education, teacher development and lifelong learning. Finnish performance is also supported by a high level of social trust, strong public education and broad access to digital services. In 2025, Finland was one of the countries that exceeded the EU Digital Decade target, with 81% of people aged 16 to 74 having at least basic digital skills (Eurostat, 2026). However, recent monitoring also shows that digital competence among pupils should not be taken for granted, because some international assessments indicate a decline in students' digital performance (European Commission, 2025a). This means that even high-performing systems need continuous adaptation.

Denmark. Denmark's practice is based on a mature digital welfare state, widespread use of digital public services and high levels of trust in public digital infrastructure. Digital interaction with public administration creates everyday incentives for citizens to develop practical digital skills. Denmark also exceeded the 80% target in 2025, reaching 81% (Eurostat, 2026). Its model demonstrates that digital competence is strengthened when citizens use digital services not occasionally, but as a normal part of civic and administrative life.

The Netherlands. The Netherlands achieved the highest result among EU Member States in 2025, with 84% of citizens aged 16 to 74 having at least basic digital skills (Eurostat, 2026). This result reflects a combination of strong connectivity, high education levels, developed digital public and private services, and active labour market demand for digital competence.

The Dutch case shows the importance of a broad ecosystem, where education, employment, business digitalisation and public services mutually reinforce each other.

Ireland. Ireland reached 83% in 2025 and also exceeded the EU target (Eurostat, 2026). The Irish model is strongly connected to the presence of a large ICT sector, international technology companies, and labour market demand for digital professionals. However, Ireland also illustrates a broader lesson: high levels of basic digital skills do not automatically solve all advanced skills challenges. The digital economy requires continuous upskilling, reskilling and inclusion of underrepresented groups.

Estonia. Estonia is often considered one of the most advanced digital societies in Europe, especially in relation to digital public services, e-health, digital identity and e-government. Estonia's strength lies in the integration of digital competences with public administration and everyday service use. The 2025 Digital Decade country reporting describes Estonia as a leader in the digitalisation of public services, including full access to e-health records (European Commission, 2025b). The Estonian case demonstrates that digital competence policy is more effective when citizens have practical reasons to use secure digital tools regularly.

Spain. Spain represents a strategic planning model. Its National Plan for Digital Skills is part of the broader Digital Spain agenda and addresses digital inclusion, workers' skills, education, public administration and digital transformation of businesses (Government of Spain, 2022). Spain's approach is important because it treats digital competences not only as an education issue, but also as an economic and social policy priority. The Spanish model is particularly relevant for countries that need to reduce digital gaps through coordinated national programmes.

Germany. Germany represents a federal and investment-oriented model. Digital education policy is shaped by cooperation between the federal government and the Länder. The DigitalPakt Schule has focused on improving digital infrastructure in schools, while the Standing Conference of the Ministers of Education and Cultural Affairs has developed strategic approaches to education in the digital world (Kultusministerkonferenz, 2021). Germany's case shows that infrastructure investment is necessary, but not sufficient. Digital competence development also requires teacher training, curriculum reform, pedagogical innovation and coherent implementation across regions.

Romania and Bulgaria. Romania and Bulgaria demonstrate the persistence of digital divides within the EU. In 2025, Romania had the lowest share of people with at least basic digital skills, at 32%, while Bulgaria reached 38% (Eurostat, 2026). These results suggest that EU-wide frameworks alone cannot remove structural barriers. Lower digital skills may be associated with socio-economic inequalities, uneven access to digital infrastructure, lower participation in lifelong learning, and weaker

integration of digital competence into education and public services. The cases of Romania and Bulgaria show the need for targeted investment, adult learning programmes and stronger institutional implementation.

Comparative synthesis. The comparison of countries suggests that successful digital competence development depends on several factors.

Table 3. Comparative features of national digital competence models

Country or group	Main model	Key strength	Main challenge
Finland	Education-centred model	Strong schools, teacher competence and lifelong learning	Maintaining student performance and adapting to AI
Denmark	Digital welfare state model	Everyday use of digital public services	Inclusion of older and vulnerable groups
Netherlands	Digital ecosystem model	Strong education, labour market and service integration	Advanced skills and cybersecurity readiness
Ireland	ICT-sector-driven model	Strong technology sector and high basic skills	Gender balance and advanced ICT workforce gaps
Estonia	E-government model	Digital identity, e-health and public service digitalisation	Keeping services inclusive and technologically updated
Spain	Strategic national planning model	Coordinated national digital skills policy	Ensuring implementation across regions and social groups
Germany	Federal investment model	Large-scale school digitalisation investment	Coordination across federal structures
Romania and Bulgaria	Catch-up model	Potential for EU-supported development	Low basic digital skills and structural digital divide

Source: compiled by the author based on (Eurostat, 2026; European Commission, 2025a; European Commission, 2025b; Government of Spain, 2022; Kultusministerkonferenz, 2021)

The results indicate that countries with high digital competence levels usually combine several elements: strong education systems, accessible digital public services, labour market demand, teacher training, lifelong learning and inclusive digital infrastructure. Countries with weaker outcomes often face challenges not only in technology access, but also in education, governance, income, regional inequality and adult learning.

Discussion. The comparison of EU regulations and national practices shows that the European Union has created a sophisticated digital competence framework, but implementation remains uneven. The EU provides common goals, indicators and competence models, while Member States retain responsibility for education systems, training policies and national implementation. This creates a productive but complex relationship between regulatory convergence and policy diversity.

The first important finding is that EU frameworks have successfully created a common language for digital competence. DigComp allows Member States, educators, employers and policymakers to describe digital skills in comparable categories (Vuorikari et al., 2022). This is essential for monitoring progress, designing curricula, developing certification systems and comparing national outcomes.

The second finding is that measurable targets matter. The Digital Decade target of 80% gives Member States a clear benchmark (European Parliament & Council of the European Union, 2022). Without this target, digital competence policy could remain fragmented and rhetorical. However, the 2025 EU average of 60% shows that targets alone are insufficient. They must be accompanied by investment, institutional capacity and effective national programmes.

The third finding concerns the relationship between digital public services and citizens' competences. Estonia and Denmark show that citizens develop digital competences more naturally when public services are digital, accessible, trusted and widely used. In these countries, digital competence is not only taught; it is practised through everyday interaction with the state.

The fourth finding relates to education. Finland demonstrates the value of integrating digital competence into education and teacher training. However, the Finnish case also warns against complacency. Student digital skills may decline if curricula, pedagogy and assessment do not adapt to new technologies. This is especially relevant in the context of AI, misinformation and cybersecurity.

The fifth finding concerns inequality. Eurostat data show that digital competence depends strongly on education level, age and labour market status (Eurostat, 2026). Therefore, digital competence policy must be linked to social inclusion policy. Older people, people with low formal education, unemployed persons and people outside the labour market require targeted support. General digitalisation may deepen inequality if vulnerable groups are not supported.

The sixth finding concerns the distinction between basic and advanced digital skills. A country may perform well in basic digital skills but still face shortages of ICT specialists. The EU had 10.4 million ICT specialists in 2025, while the 2030 target is 20 million (Eurostat, 2026). Moreover, women represented only 19.5% of ICT specialists, which shows that gender imbalance remains a major challenge. This means that digital competence policy should have two levels: basic digital skills for all citizens and advanced skills for the digital economy.

The seventh finding is connected to AI literacy. The AI Act changes the digital competence agenda because organisations using AI systems must ensure sufficient AI literacy among staff and relevant persons (European Parliament & Council of the European Union, 2024). This creates a new regulatory link between digital competence and compliance. In the future, digital competence will increasingly include understanding algorithmic systems, data risks, transparency, bias, accountability and human oversight.

Overall, the discussion shows that digital competence is not only a technical education issue. It is a governance issue. It requires coordination between education, employment, innovation, public administration, social inclusion and regulation.

Conclusions. The EU has developed one of the most comprehensive digital competence policy frameworks in the world. Its approach combines strategic targets, methodological frameworks, education recommendations and binding regulatory elements. The Digital Decade Policy Programme establishes measurable goals. DigComp and DigCompEdu provide conceptual and practical tools. The Digital Education Action Plan supports education transformation. The Council recommendations guide Member States in improving digital skills provision. The AI Act introduces AI literacy as a new regulatory requirement.

However, the comparison of countries shows that EU-level regulation does not automatically produce equal national outcomes. In 2025, the EU average for at least basic digital skills was 60%, while the 2030 target is 80%. The Netherlands, Ireland, Denmark and Finland had already exceeded the target, while Romania and Bulgaria remained far below it. This gap demonstrates that national implementation capacity is decisive.

The most successful countries usually combine digital education, lifelong learning, trusted digital public services, strong infrastructure, labour market demand and inclusive policies. Estonia and Denmark show the role of digital public services. Finland shows the role of education and teacher competence. The Netherlands and Ireland show the importance of digital ecosystems and labour market demand. Spain shows the value of national strategic planning. Germany shows that infrastructure investment must be combined with pedagogical and institutional reform.

The main challenges for the EU are the digital divide, unequal access to lifelong learning, age and education gaps, gender imbalance in ICT professions, uneven national implementation and the need to integrate AI literacy into digital competence policy.

The article concludes that the future of EU digital competence regulation should move in three directions. First, EU frameworks should continue to provide common standards and measurable indicators. Second, Member States should adapt these frameworks to national education, labour market and social inclusion systems. Third, digital competence policy should increasingly include AI literacy, cybersecurity awareness, data ethics and critical digital citizenship. Only this integrated approach can help the EU achieve the Digital Decade target and ensure that digital transformation remains inclusive, human-centred and socially sustainable.

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References:

1. Carretero, S., Vuorikari, R., & Punie, Y. (2017). DigComp 2.1: The digital competence framework for citizens with eight proficiency levels and examples of use. Publications Office of the European Union. <https://doi.org/10.2760/38842>
2. Council of the European Union. (2018). Council Recommendation of 22 May 2018 on key competences for lifelong learning. Official Journal of the European Union. [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018H0604\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018H0604(01))
3. Council of the European Union. (2024). Council Recommendation of 23 November 2023 on improving the provision of digital skills and competences in education and training. Official Journal of the European Union. <https://eur-lex.europa.eu/eli/C/2024/1030/oj/eng>
4. European Commission. (2020). Digital Education Action Plan 2021-2027: Resetting education and training for the digital age. <https://education.ec.europa.eu/focus-topics/digital-education/action-plan>
5. European Commission. (2025a). Education and Training Monitor 2025: Finland. Publications Office of the European Union. <https://op.europa.eu/webpub/eac/education-and-training-monitor/en/country-reports/finland.html>
6. European Commission. (2025b). Estonia 2025 Digital Decade country report. <https://digital-strategy.ec.europa.eu/en/factpages/estonia-2025-digital-decade-country-report>
7. European Commission. (2025c). State of the Digital Decade 2025 report. <https://digital-strategy.ec.europa.eu/en/library/state-digital-decade-2025-report>
8. European Parliament and Council of the European Union. (2022). Decision (EU) 2022/2481 of 14 December 2022 establishing the Digital Decade Policy Programme 2030. Official Journal of the European Union. <https://eur-lex.europa.eu/eli/dec/2022/2481/oj>
9. European Parliament and Council of the European Union. (2024). Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence. Official Journal of the European Union. <https://eur-lex.europa.eu/eli/reg/2024/1689/oj>
10. Eurostat. (2026). Skills for the digital age: Statistics explained. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Skills_for_the_digital_age
11. Government of Spain. (2022). Digital Spain 2026. <https://espanadigital.gob.es/en>
12. Kultusministerkonferenz. (2021). Education in the digital world. <https://www.kmk.org/en/bildungsministerkonferenz/bildungsthemen/bildung-in-der-digitalen-welt.html>
13. Mihus, I. (2024). Innovating education for financial specialists: The digitalization imperative. In M. Denysenko, L. Khudoliy, & S. Laptiev (Eds.), *Digital Skills in a Digital Society: Requirements and Challenges* (pp. 58-86). Scientific Center of Innovative Research. <https://doi.org/10.36690/DSDS-58-86>
14. Redecker, C., & Punie, Y. (2017). European framework for the digital competence of educators: DigCompEdu. Publications Office of the European Union. <https://doi.org/10.2760/159770>
15. Spivak, I., Mihus, I., & Greben, S. (2024). A comparative analysis of the digital competencies development in adult education. *Pedagogy and Education Management Review*, 2(16), 18-27. <https://doi.org/10.36690/2733-2039-2024-2-18-27>
16. Spivak, I., Mihus, I., & Greben, S. (2024). Financial literacy and government policies: An international study. *Public Administration and Law Review*, 2(18), 21-33. <https://doi.org/10.36690/2674-5216-2024-2-21-33>
17. Vuorikari, R., Kluzer, S., & Punie, Y. (2022). DigComp 2.2: The digital competence framework for citizens, with new examples of knowledge, skills and attitudes. Publications Office of the European Union. <https://doi.org/10.2760/115376>