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Exploring the nexus between digital transformation, employment dynamics and education in the context of New Normal paradigm

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Abstract. The post-pandemic period has introduced the New Normal paradigm characterized by rapid digital development, changes in employment frameworks, and reorganization of educational systems. Under the New Normal framework, societies are experiencing a fundamental shift away from traditional paradigms of work and learning, moving instead towards more flexible, digitally-enabled, and hybrid configuration. This paper analyses the complex interconnections among digital revolution, employment dynamics, and education shifts within theoretical and empirical perspectives, emphasizing policy implications as well as approaches for promoting an inclusive digital transition.
Keywords: *digital transformation, employment dynamics, education, new normal, workforce adaptation, reskilling, digital skills.*

Introduction

The accelerated digitalization of the economic and social life has become one of the most defining features of the twenty-first century. The convergence of digital transformation, shifting employment dynamics, and the evolving role of education is increasingly recognized as a critical area of inquiry, particularly under the conditions of the so-called "new normal." This new paradigm, largely precipitated by the COVID-19 pandemic, has brought about lasting changes in how people work, learn, and interact. Remote working arrangements, e-commerce expansion, and virtual communication platforms rapidly became everyday practices, while conventional business models and labour market structures were significantly disrupted. As such, digital transformation has moved from being an optional innovation to a strategic necessity, central to enhancing economic resilience and ensuring

long-term sustainability. Despite its importance, this nexus remains underexplored in the academic literature.
The relationship between digital technologies, employment patterns, and educational systems is highly complex, involving both opportunities and challenges for societies worldwide. On one hand, digitalization opens possibilities for flexible work arrangements, increased productivity, and access to new skills and markets. On the other hand, it poses risks such as job polarization, digital divides, and the erosion of work-life boundaries. Education needs to adapt to prepare people for fast changing skill demands, while also reducing inequalities that digitalization may increase. Understanding how these domains interact is critical for shaping policies and practices that foster inclusive and sustainable growth in the digital era.
Existing research shows several limitations as the the business and management literature rarely treats digital transformation, employment dynamics, and education as a unified nexus. This fragmented approach has constrained the capacity to assess systemic implications. For example, while studies have considered the effect of digitalization on employment or the role of education in digital skill formation, fewer have examined how these processes interact to influence broader social outcomes such as work–life balance, employee well-being, or the long-term sustainability of labour demand in digital economies (Orosz et al., 2019).
The information systems literature disproportionately emphasizes post-adoption issues, including digital strategy, implementation, and alignment with organizational goals. While such research reflects the rapid pace at which digital technologies diffuse, it often neglects the deeper transformational effects of digitalization on economic structures, institutional arrangements, and human capital development (Bajpai & Biberman, 2019). By focusing primarily on the operational dimensions of digital adoption, the literature risks overlooking the broader societal transformations generated by digitalization.
Research on the digital economy often confines itself to analyzing the impacts of specific technologies, such as social media platforms, cloud services, or digital commerce, on organizational performance. Although these studies provide valuable insights, they represent only a fraction of the wider spectrum of technological change. Restricting the focus to established tools risks underestimating the transformative capacity of emerging technologies and their implications for employment and education systems. In this case, existing scholarship offers only a partial account of how digitalization reshapes economic and social realities.
These gaps highlight the importance of adopting a more holistic perspective. To fully understand the nexus of digital transformation, employment, and education in the new normal, research must go beyond siloed approaches and fragmented analyses. It requires a systemic framework capable of addressing interdependencies, capturing both positive and negative outcomes, and exploring the role of institutions and policies in managing the transition. Such an approach would not only deepen theoretical understanding but also provide practical insights for policymakers, educators, and business leaders seeking to navigate the challenges of digitalization.
The aim of this study is to analyse the interconnections among digital transformation, employment dynamics, and education in the context of the new normal. By addressing gaps in the existing literature and highlighting underexplored dimensions, this research aims to provide a more comprehensive perspective on the ongoing transformative processes.

Literature review

The relation between digital transformation, employment dynamics, and education within the framework of the New Normal has become a central domain of scholarly investigation. Digitalization is widely recognized not only as a driver of technological change, but also as a catalyst for profound shifts in pedagogical approaches, labour market structures, and the skill requirements shaping both educational institutions and employer expectations.
Pyka (2017) underscores the strategic importance of innovative systems in facilitating the transition toward a knowledge-intensive digital bioeconomy. Embedding digitalization into bioeconomic models

can generate new income opportunities and support employment diversification, especially in contexts where traditional industries, such as oil-dependent sectors, face structural inertia. Digital transformation also reverberates through macroeconomic and policy dimensions. Pasqualino et al. (2021) introduce a system dynamics model linking industrial innovation with inequality and inflation, illustrating how technological change affects socio-economic structures.

Arango-Vásquez et al. (2021) illustrate this transition through the rapid deployment of ICT-mediated teaching strategies during the COVID-19 crisis, showing how universities were compelled to redesign teaching and learning processes in response to new expectations from students and faculty. This was more than a technological adjustment: it reshaped professional roles, requiring educators and learners alike to acquire new digital competencies. Similarly, Corvello et al. (2021) highlight how digital integration reshapes entrepreneurial activity and organizational practices, revealing that the reconfiguration of work structures under digital transformation is closely linked to the evolution of entrepreneurial ecosystems and labour dynamics. These findings underscore the systemic nature of digitalization, where education, entrepreneurship, and employment function as mutually reinforcing drivers of change.

How higher education adapts to these pressures remains a pressing question. Branch et al. (2020) critically assess the state of digital transformation within academic institutions, noting a divergence between rhetoric and reality. Although universities adopt numerous digital initiatives, many fail to implement substantive structural change. The role of higher education in preparing digitally resilient graduates is particularly emphasized by Eri et al. (2021), who compare student experiences across Asian and Australian universities. Their research indicates that the pandemic acted as a catalyst for strengthening digital confidence, adaptability, and resilience, qualities that are now essential for employability in digitally intensive labour markets. Higher education emerges as a critical arena in this debate. Jackson (2019) identifies both the opportunities and vulnerabilities associated with digital transformation in universities, pointing to the importance of institutional absorptive capacity. He argues that developing organizational competencies for managing innovation is essential to avoid common pitfalls of digitalization strategies.

Empirical evidence from labour economics further substantiates these claims. Fossen et al. (2019) analyze the U.S. labour market and find that the diffusion of digital technologies produces heterogeneous employment and wage effects across occupations.

Educational practices themselves are undergoing profound change through digital tools. Zhang (2023) examines the rise of online learning environments, highlighting the critical role of interactional competencies for both students and educators. Effective digital pedagogy depends not only on technological access but also on the cultivation of communication and engagement strategies that sustain the development of labour -market-relevant skills in virtual contexts. Li et al. (2024) extend this analysis to primary education, focusing on the integration of artificial intelligence. Their study reveals that teachers' perceptions and contextual conditions strongly influence AI adoption. This suggests that the digital transformation of education depends on aligning technological tools with pedagogical culture, thereby preparing younger generations for employment landscapes increasingly shaped by AI-driven technologies.

Complementing this, McPhillips et al. (2021) argue that cultivating open innovation and entrepreneurial mindsets is crucial for building future-proof workforces. Their interdisciplinary analysis suggests that higher education must evolve into a platform that nurtures transferable competencies, such as problem-solving, creativity, and collaboration, which are increasingly indispensable in knowledge-driven economies.

Beyond the educational sphere, Eden (2022) examines digital information management as a strategic domain, demonstrating how digital paradigms redefine institutional operations, user engagement, and organizational strategies. This perspective reveals that the New Normal is not simply about technological adoption but about holistic restructuring across education and employment landscapes. Aguaded et al. (2022) provide an extensive overview of media education's trajectory, arguing that

digitalization has democratized access to knowledge, stimulated creativity, and reinforced the centrality of digital literacy as a foundation for both learning and employability.
Empirical studies further illustrate the breadth of this transformation. Jeong (2023) shows how social networking tools enhanced language learning during the pandemic, proving that digital platforms can both sustain and enrich education by fostering skills directly transferable to labour market contexts. In a different domain, Shehadeh et al. (2024) analyze the banking sector, showing that digital transformation enhances firm performance while also exposing nuanced gender-based disparities. Cin et al. (2024) bring attention to the gendered and social dimensions of digital education, particularly in the context of international distance learning. Their feminist perspective highlights how home-based learning environments function as both spaces of education and sites of social reproduction, which can either entrench or challenge existing inequalities. The literature demonstrates that digital transformation is not a linear process of technological upgrading but a multidimensional restructuring of economies, labour markets, and educational systems. Its impacts are contingent on institutional capacity, policy frameworks, and social contexts. For sustainable outcomes, education and employment policies must evolve in tandem with technological change, ensuring that digitalization enhances rather than undermines social and economic resilience.

Digital Skills and labour market in the European Union

The accelerating digital transformation across the European Union (EU) has redefined the skills landscape for both economies and societies. As technological innovation reshapes labour markets through automation, artificial intelligence, and the expansion of e-services, digital competencies have emerged as non-negotiable prerequisites for employability, social participation, and civic engagement.

Table 1 Individuals with at least basic overall digital skills, by age and sex, EU, 2023 (% of individuals)

Cohorts	Males		Females	
	Males with basic overall digital skills	Males with above basic overall digital skills	Females with basic overall digital skills	Females with above basic overall digital skills
16 - 24 years	-31	-37	33	39
25 - 34 years	-29	-40	33	38
35 - 44 years	-30	-35	33	33
45 - 54 years	-28	-30	32	25
55 - 64 years	-25	-21	27	15
65 - 74 years	-20	-13	17	6

Source: Eurostat (online data code: isoc_sk_dskl_i21)

The data presented in table 1 argues that younger age groups are the most digitally proficient. Within the 16–24 cohort, 31% of men possess basic digital skills and 37% have above basic skills, while women slightly outperform them with 33% and 39% respectively. This pattern continues among those aged 25–34, where men record 29% basic and 40% above basic competences, compared with 33% and 38% for women. In both groups, above basic skills exceed basic skills, underscoring the extent to which these individuals can be considered true "digital natives." Their formative years were marked by immersion in digital environments, shaped not only by education systems and higher education curricula but also by digitally integrated social networks and workplaces.
The trajectory begins to shift within the 35–44 age group where, men report 30% basic and 35% above basic skills, while women show 33% in both categories. By the 45–54 cohort, disparities deepen: men report 28% basic and 30% above basic, whereas women reach 32% in basic but only 25% in above basic skills. This stage marks a inflection point, where digital competences start to plateau and then decline. Unlike younger groups, these cohorts entered the labour market before the full onset of digitalization. Their digital capacity stems largely from adaptation during their professional lives

rather than from formal education, leaving them with sufficient competence for daily tasks but gaps in advanced applications required for evolving labor market demands.
For individuals aged 55–64, men register 25% basic and 21% above basic skills, while women reach 27% and only 15% respectively. Among the 65–74 age group, digital proficiency collapses: men fall to 20% basic and 13% above basic, while women drop to 17% basic and just 6% above basic. This decline reflects a pronounced generational divide. These older cohorts were educated and employed in socio-economic contexts largely disconnected from digital technologies. Their limited exposure during formative years, coupled with weaker incentives to pursue digital training in late life, has left many excluded from advanced competences essential for navigating a fully digitalized society.
Across most cohorts, women consistently outperform men in basic digital skills. For example, in the 35–44 group, women achieve 33% compared with men's 30%. This trend suggests that women, often overrepresented in service-sector roles and household management tasks, have embedded digital tools into everyday activities such as communication, online transactions, and accessing services.
Conversely, men surpass women in advanced competences among older age groups. In the 55–64 cohort, 21% of men possess above basic skills compared to only 15% of women. The gap widens significantly among those aged 65–74, where men reach 13% and women fall to just 6%. This divergence reflects historical occupational segregation: men were disproportionately employed in technical, engineering, and ICT-related professions, where digital proficiency and adaptation to new technologies were more systematically developed.
Among the youngest cohorts, however, gender differences diminish or even reverse. Women aged 16–24 slightly outperform men at both levels of digital proficiency. This convergence points to greater gender parity in access to education and to the pervasive normalization of digital practices across all aspects of social and professional life for younger generations. Younger Europeans, beneficiaries of ICT integration into schools, universities, and workplaces, demonstrate high levels of competence. Middle-aged groups adapted to the digital shift of the 1990s and 2000s within professional contexts but without formative exposure, leading to a plateau. Older generations lacked such structured experiences altogether, resulting in a steep deficit that persists into retirement age. Advanced competences, in particular, are closely linked to ICT-intensive occupations. The stronger performance of men in older age groups reflects their concentration in technical professions that demanded higher levels of digital engagement. By contrast, women's concentration in service-oriented and administrative sectors cultivated competence in routine digital tasks but limited opportunities for developing more advanced skills.

Table 2: Individuals with at least basic overall digital skills, by education attainment level and by status in labour market, EU, 2023

Categories	Individuals with basic or above basic overall digital skills	Individuals with above basic overall digital skills	Individuals with basic overall digital skills
All Individuals	56	27	28
Individuals with high formal education	80	48	32
Individuals with medium formal education	51	21	30
Individuals with no or low formal education	34	12	21
Students	75	43	33
Employees, self-employed, family workers	65	33	31
Unemployed	48	21	27
Individuals who are retired or not in the labour force (excluding students)	31	10	21

Source: Eurostat (online data code: isoc_sk_dskl_i21)

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Data from 2023 illustrates this point by mapping competences across education level and labour market status. The general distribution of skills shows that a slight majority of EU citizens—56%—have acquired at least basic digital competences. Within this group, 27% demonstrate above-basic skills, while 28% remain at the basic threshold. This structure reveals a two-tier system: one tier consisting of individuals with advanced capabilities who can navigate complex digital environments, and another of individuals restricted to elementary usage. Nearly half of the population, however, still falls short of these standards, confirming that Europe's digital transition remains incomplete.

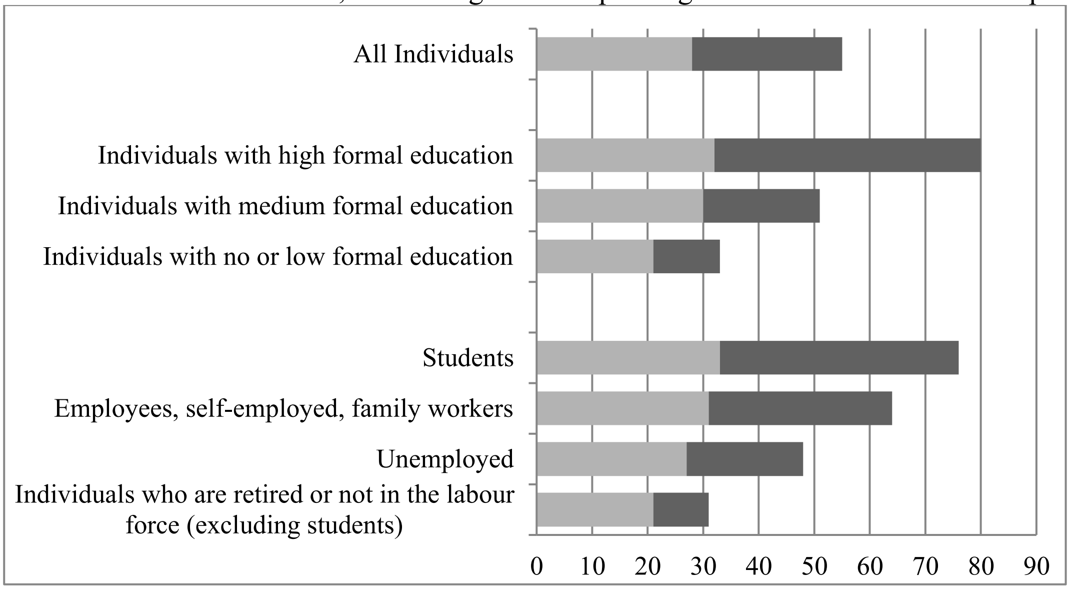

Figure 1: Individuals with at least basic overall digital skills, by education attainment level and by status in labour market, EU, 2023
Source: Eurostat (online data code: isoc_sk_dskl_i21)

Education proves to be the strongest determinant of digital competence. Among those with high levels of formal education, 80% report at least basic digital skills, with nearly half (48%) advancing to above-basic competences. This group surpasses the EU's strategic targets, indicating that educational attainment translates directly into digital readiness. The contrast is sharp with individuals of medium education, where only 51% meet the basic threshold and just 21% achieve higher-level competences. The situation is more critical among those with low or no education: barely one-third (34%) possess even basic skills, and only 12% advance beyond that. The education gradient thus reveals a stratified landscape where human capital translates into digital advantage, while low educational attainment entrenches digital exclusion. Labour market status further differentiates digital competences. Students emerge as one of the most digitally equipped groups: 75% have at least basic skills, and 43% hold above-basic competences. This reflects both generational familiarity with technology and institutional exposure through education systems. The employed and self-employed also show relatively high inclusion, with 65% meeting the basic threshold and one-third attaining advanced competences, underlining how workplace demands sustain and reinforce digital literacy. In contrast, the unemployed present weaker outcomes: less than half (48%) reach the basic level, and only one in five achieve above-basic competences. This deficit creates a feedback loop—digital weakness reduces employability, and unemployment further restricts opportunities to acquire new competences. Retired and inactive individuals represent the most digitally excluded group, with just 31% reporting at least basic skills and only 10% reaching above-basic competences. This result illustrates the generational divide, where older cohorts are less integrated into digital environments.

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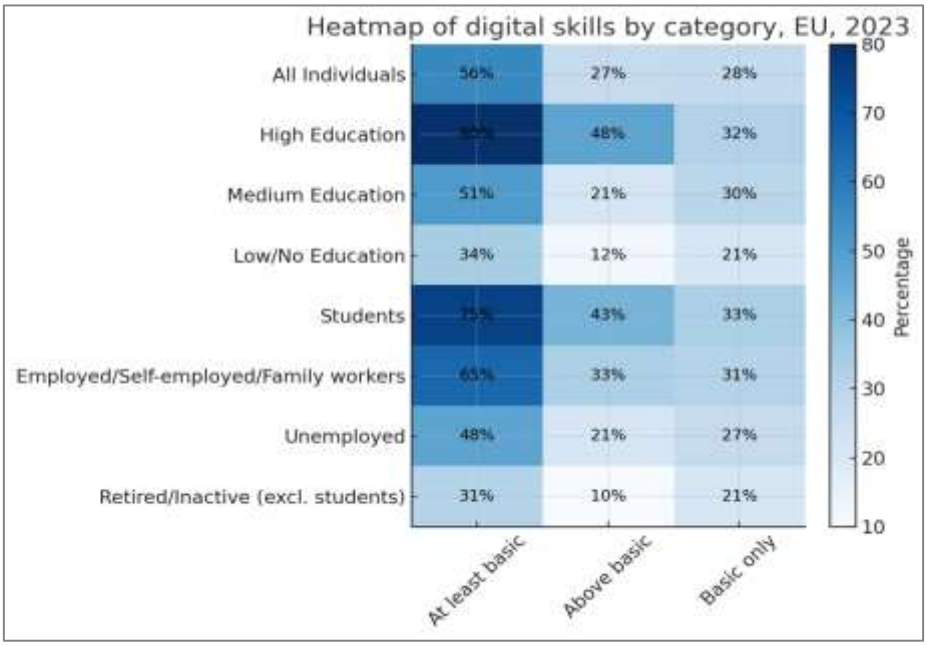

Figure 2: Digital skills by category in European Union in 2023
Source: author's based on Eurostat, 2023

When comparing across these categories, three structural divides become apparent. The first is the educational divide, which produces a gap of more than forty percentage points in digital competences between the highly educated and the low educated. The second is the employment divide, with workers showing far stronger competences than inactive or unemployed groups. The third is the generational divide, where students and younger adults significantly outperform retirees. These divides are cumulative, meaning that low education, unemployment, and older age overlap to concentrate digital exclusion in specific social groups.

The implications are profound for both the economy and society. In the labour market, the persistence of digital skill gaps threatens to limit productivity, hinder adaptability to technological change, and slow the EU's progress toward its digital and green transitions. For the unemployed, weak digital skills act as an obstacle to reintegration, reinforcing long-term marginalization. From a social perspective, digital exclusion among retirees and inactive populations restricts access to essential services, particularly as public administration, healthcare, and finance shift toward digital platforms.

The 2023 data reveals that while progress has been made in raising the overall level of digital skills in the EU, significant disparities remain. Education and employment continue to be the strongest predictors of digital competence, while unemployment, low education, and retirement are associated with marked exclusion.

The employment of Information and Communication Technology (ICT) specialists is a critical indicator of digital transformation in the European Union (EU). Between 2015 and 2024, the ICT workforce expanded both in absolute numbers and as a share of total employment, reflecting structural shifts in labour demand. This essay presents a statistical analysis of the data, identifies key trends and inflection points, and discusses broader economic and policy implications.

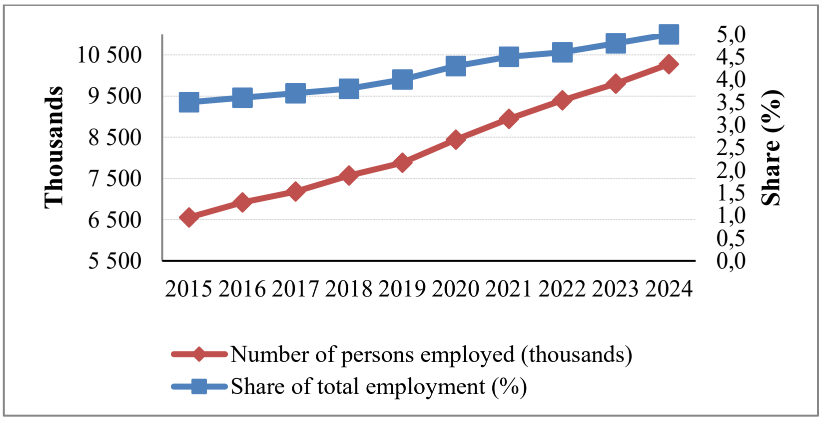

Figure 3: Evolution of the ICT specialists in EU during 2014 – 2023
Source: Eurostat (online data code: isoc_sks_itspt)

According to Eurostat data, the number of ICT specialists employed in the EU increased from approximately 6.1 million in 2015 to around 10.2 million in 2024. This expansion of 4.1 million workers represents a growth rate of about 67% within less than a decade. Yearly increments reveal a steady upward trajectory, with particularly accelerated growth between 2019 and 2022.

In terms of labour market share, ICT specialists represented only about 2.9% of total employment in 2015. By 2024, this figure had climbed to 4.9%. Although the percentage increase may appear modest, it is significant given the scale of the European labour force. In 2024, nearly one in twenty workers is employed as an ICT specialist. This increase demonstrates the growing centrality of ICT roles, not as niche occupations but as fundamental pillars of the EU economy.

Between 2015 and 2024, ICT specialists in the EU experienced uninterrupted growth, rising by 56.7% in absolute terms and increasing their share of employment from 3.5% to 5.0%. The sector demonstrated resilience during economic shocks, accelerated sharply during the COVID-19 pandemic, and continues to expand at a structural level. Projections suggest ICT specialists could represent 6% of the EU workforce by 2030. These findings underscore the importance of ICT labour in shaping EU competitiveness, with implications for workforce development, education policy, and long-term economic strategy.

The period can be divided into three phases. The first (2015–2018) was characterized by steady expansion (+15.5%). The second (2019–2021) marked the strongest acceleration (+19.9%), largely attributable to digital transformation triggered by the pandemic. The third (2022–2024) showed moderated but sustained growth (+9.3%), indicating consolidation at a higher baseline.

Several drivers underpinned this trajectory:

- Digital transformation policies, especially the EU's Digital Decade 2030 targets.
- The expansion of cloud computing, AI, and big data applications across industries.
- The adoption of remote work during the pandemic, which expanded the demand for digital infrastructure and cybersecurity.
- Cross-sector diffusion of digital technologies into finance, healthcare, and manufacturing.

Conclusions

The rapid expansion of ICT employment in the European Union presents a complex set of policy challenges. The analysis of the interconnections between digital transformation, employment dynamics, and education in the context of the New Normal demonstrates that these three domains are inseparably linked and mutually reinforcing. The accelerated pace of digitalization has moved beyond the stage of being a complementary innovation and has instead become a structural necessity for the resilience and competitiveness of economies and societies. This paradigm shift has redefined the way work is organized, the skills that are demanded, and the institutional role of education.

Digital transformation must be understood not merely as the adoption of technological tools but as a systemic restructuring process. It has altered the very architecture of labour markets, business models, and educational systems. The expansion of ICT-related occupations in the European Union is illustrative of this structural reconfiguration. Between 2015 and 2024, the number of ICT specialists grew by almost 70%, raising their share of the total workforce to nearly 5%. If this trajectory continues, the ICT workforce could reach 13 million workers by 2030, consolidating its role as a central pillar of Europe's economy and technological sovereignty. Such trends highlight the strategic relevance of ICT skills, both for economic growth and for the maintenance of social cohesion in the digital era.

The study confirms the decisive role of education in shaping digital competences. Data from 2023 show that individuals with higher levels of formal education are far more likely to possess advanced digital skills, surpassing 80% inclusion compared with only one-third among those with low or no education. The education divide therefore emerges as the most powerful predictor of digital inequality, reinforcing the need for systemic reform in curricula, teaching strategies, and partnerships between universities and industry. Students demonstrate significantly higher levels of digital competence, confirming the transformative role of educational institutions in equipping new generations for digitally intensive labour markets.

The employment status and generational factors also produce significant divides in digital competence. Workers and students exhibit stronger digital readiness, while the unemployed, retirees, and other inactive groups show clear deficits. These disparities are cumulative: low educational attainment, unemployment, and older age often overlap, producing clusters of digital exclusion. This stratification not only reduces employability and adaptability for affected individuals but also constrains the capacity of societies to fully leverage digital transformation for inclusive growth.

The dynamics of ICT labour markets underline the necessity of proactive policy responses. The expansion of ICT roles has been uneven across regions, with metropolitan hubs and innovation clusters benefiting disproportionately. The geographic imbalance risks widening socio-economic disparities unless addressed through cohesion policies, targeted investments, and incentives to foster digital employment opportunities in less developed or rural regions. Gender disparities also remain significant, particularly in advanced digital skills and ICT professions, where men continue to dominate. Corrective measures are required, including scholarships, targeted outreach, and workplace reforms designed to attract and retain women and other underrepresented groups in ICT-related fields.

The challenge of meeting demand for ICT skills cannot be solved exclusively through domestic educational and training systems. Reskilling and upskilling programs for workers displaced from declining industries will be critical in preventing structural unemployment and facilitating upward mobility. At the same time, well-calibrated immigration policies and international talent-attraction strategies will be required to supplement local labour markets and maintain Europe's competitive edge in global technological ecosystems. The study underscores the dual nature of digital transformation: it is both an engine of opportunity and a generator of risk. It fosters new forms of work, enhances productivity, and supports access to knowledge and services. Also, it risks deepening polarization, entrenching inequalities, and excluding vulnerable groups if not carefully managed. The New Normal is not simply a technological phenomenon but a socio-economic and institutional transformation. Its long-term trajectory will depend on the ability of policymakers, educators, and businesses to coordinate strategies that maximize benefits while mitigating risks.

References

[1] Nayak, S. K. (2017). Digital transformation roadmap: the case of Nova SBE's executive education (Master's thesis, Universidade NOVA de Lisboa (Portugal).

[2] Orosz, B., Kovács, C., Karuović, D., Molnár, G., Major, L., Vass, V., ... & Námesztovszki, Z. (2019). Digital education in digital cooperative environments. Journal of Applied Technical and Educational Sciences, 9(4), 55-69.

[3] Bajpai, N., & Biberman, J. (2019). The future of work in india: Adapting to the fourth industrial revolution (No. 11). ICT India Working Paper.

[4] Arango-Vásquez, S. I., & Manrique-Losada, B. (2021, September). Rethinking an ICT-mediated teaching strategy during the COVID-19 pandemic. In 2021 XI International Conference on Virtual Campus (JICV) (pp. 1-5). IEEE.

[5] Corvello, V., De Carolis, M., Verteramo, S., & Steiber, A. (2022). The digital transformation of entrepreneurial work. International Journal of Entrepreneurial Behavior & Research, 28(5), 1167-1183.

[6] Eri, R., Gudimetla, P., Star, S., Rowlands, J., Girgla, A., To, L., ... & Bindal, U. (2021). Digital resilience in higher education in response to COVID-19 pandemic: Student perceptions from Asia and Australia. Journal of University Teaching and Learning Practice, 18(5), 1-28.

[7] Eurostat (2025a).Digital economy and society statistics – enterprises, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_economy_and_society_statistics_-_enterprises, accessed: [03.07.2025].

[8] Eurostat (2025). Digitalisation in Europe – 2025 edition, available at: https://ec.europa.eu/eurostat/web/interactive-publications/digitalisation-2025, accessed: [03.07.2025].

[9] Eurostat (2025b).Towards Digital Decade targets for Europe, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Towards_Digital_Decade_targets_for_Europe, accessed: [03.07.2025].

[10] McPhillips, M., & Licznerska, M. (2021). Open innovation competence for a future-proof workforce: a comparative study from four European universities. Journal of Theoretical and Applied Electronic Commerce Research, 16(6), 2442-2457.

[11] Eden, B. L. (2022). Future Directions in Digital Information: Predictions, Practice, Participation (Chandos Digital Information Review Series). Journal of Electronic Resources Librarianship, 34(1), 85-85.

[12] Aguaded, I., Civila, S., & Vizcaíno-Verdú, A. (2022). Paradigm changes and new challenges for media education: Review and science mapping (2000-2021). Profesional de la Información, 31(6).

[13] Jeong, K. O. (2023). Integrating technology into language teaching practice in the post-COVID-19 pandemic digital age: From a Korean English as a foreign language context. RELC journal, 54(2), 394-409.

[14] Shehadeh, M., Alshurafat, H., & Arabiat, O. (2025). Inverting the paradigm: digital transformation’s impact on firm performance and the counterintuitive role of gender. Competitiveness Review: An International Business Journal, 35(2), 371-390.

[15] Pyka, A. (2017). Dedicated innovation systems to support the transformation towards sustainability: Creating income opportunities and employment in the knowledge-based digital bioeconomy. Journal of Open Innovation: Technology, Market, and Complexity, 3(4), 1-18.

[16] Jackson, N. C. (2019). Managing for competency with innovation change in higher education: Examining the pitfalls and pivots of digital transformation. Business Horizons, 62(6), 761-772.

[17] Fossen, F. M., & Sorgner, A. (2019). New digital technologies and heterogeneous employment and wage dynamics in the United States: Evidence from individual-level data (No. 12242). IZA Discussion Papers.

[18] Branch, J. W., Burgos, D., Serna, M. D. A., & Ortega, G. P. (2020). Digital transformation in higher education institutions: between myth and reality. In Radical solutions and eLearning: Practical innovations and online educational technology (pp. 41-50). Singapore: Springer Singapore.

[19] Pasqualino, R., Demartini, M., & Bagheri, F. (2021). Digital transformation and sustainable oriented innovation: A system transition model for socio-economic scenario analysis. Sustainability, 13(21), 11564.
[20] Zhang, D. (2023). Exploring the impact of online learning on university students' classroom interactions. Journal of Education, Humanities and Social Sciences, 22, 98-101.
[21] Li, M., & Noori, A. Q. (2024). Exploring the nexus of attitude, contextual factors, and AI utilization intentions: A PLS-SEM analysis among primary mathematics teachers in China. Asian Journal for Mathematics Education, 3(3), 289-311.
[22] Cin, F. M., Breines, M. R., Raghuram, P., & Gunter, A. (2025). Exploring homeplace as a nexus of learning and socially reproductive labour: A feminist perspective on internationalisation at a distance. British Journal of Educational Technology, 56(2), 799-814.
[23] Towards Digital Decade targets for Europe, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Towards_Digital_Decade_targets_for_Europe

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