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# The Future of Skills and the Labour Market in the Age of AI

## Introduction

We are witnessing the inevitable and ominous consequences of the next industrial revolution: in this context, we are also observing increasingly ominous, semi-pessimistic predictions regarding the robotisation and mechanisation of the labour market in services, production, and even art. Young people, who enter the labour market, perceive these trends more optimistically because of their nature than analysts or professional observers; the younger generation as "Z", "X", or, let us call them, "Sigma" becoming a critical part of the development and implementation of AI generative technology. AI systems take over repetitive and data-intensive functions, the most resilient workers will be those equipped with meta-skills such as adaptability, systems thinking, cognitive flexibility, and interdisciplinary collaboration. These capabilities allow professionals to shift roles fluidly, address ambiguous challenges, and synthesise machine-generated outputs into complex decision-making processes. The importance of these overarching skills is steadily rising in environments where humans must complement machine intelligence rather than compete with it.

This article addresses the multifaceted challenges and transformations brought about by the rapid advancement of artificial intelligence (AI) across key areas of contemporary society – particularly education, scientific research, creativity, and labour markets. At the core of the analysis lies a growing concern over how AI is reshaping the nature of work and competences,

displacing certain professions while creating new, hybrid roles that blend human and machine capabilities. The author will try to explore how AI systems increasingly influence learning environments through emotional sensitivity, contribute to interdisciplinary scientific inquiry, and participate in creative processes, blurring the boundaries between human and artificial authorship. It also examines how these changes redefine essential skills and professional competencies, especially in the context of post-pandemic digital acceleration.

The primary purpose of this study is to investigate the implications of AI-driven transformation for future job markets and to identify the types of meta-skills – such as adaptability, systems thinking, emotional intelligence, and interdisciplinary collaboration - that will be critical for individuals to thrive in this evolving landscape. Particular attention is given to the Polish labour market as a case study, illustrating broader global trends. The article calls for a balanced integration of AI into human-centred systems, emphasising the importance of ethical governance, responsible innovation, and the development of both technical and emotional competencies.

Methodologically, the research relies on desk research and qualitative analysis of the latest global reports, policy documents, and scientific literature. This includes insights from institutions such as the World Economic Forum, the OECD, UNESCO, and national initiatives such as the Polish Digital Skills Strategy. Additionally, real-world examples – such as the AlphaFold protein prediction system or AI-generated artistic projects – are used to illustrate the potential and complexity of AI's impact on work and creativity. Through this approach, the article seeks to contribute to an informed discussion on the future of skills and work in the age of intelligent machines.

It seems that the buzz of recent appeals, statements, and manifestos calling for suspending work on AI development (e.g., from Sam Altman of ChatGPT or Dennis Hassabis of DeepMind 1) and some doubts about the future of implementing AI are gone. There is no chance to postpone or slow down the process of modernisation and robotisation through implementing AI technology. However, representatives of main AI companies such as OpenAI, Alphabet (Google DeepMind), Anthropic and many other laboratories working on AI warn that artificial intelligence may become an existential threat to humanity and should be treated as a social risk on an equal footing with climate extinction and pandemics, or weapons of mass destruction. Such a sort of peak of emotions and tensions around AI technology, or rather side effects of these struggles, was observed, for example, in the case of the "conflict" between OpenAI shareholders and S. Altman himself and a group of almost 700 employees supporting his former CEO (Natale, 2025; Washington Post, 2023).

## AI as a Supportive Tool, Not a Replacement

A discussion on the ambiguity of AI has almost disappeared and now we are facing other challenges. In the near future, AI systems are expected to develop emotional sensitivity, enabling them to recognise human emotional states. Mentioned here already many times, a creative figure – Sam Altman, CEO of OpenAI, has recently addressed the emotional aspects of future AI systems, emphasising both their potential and the ethical considerations they entail. Altman envisions AI not as a replacement for humans but as a powerful tool that amplifies human capabilities. He describes the "Platonic ideal" of AI as a collaborative partner that enhances what humans can do, rather than taking over human roles. This perspective underscores the importance of maintaining human agency and emotional intelligence in an AI-integrated future (Altman, 2025; AMA, para. 5). While acknowledging that AI cannot truly experience emotions, Altman believes that it can be programmed to understand and respond to emotional cues in ways that support human well-being. He stresses the necessity for AI to be developed with strong ethical guidelines, ensuring transparency and accountability to build trust between users and AI systems *(Altman, 2024, para. 4*). At the same time, he has expressed concerns about the growing emotional bonds people are forming with AI systems. He cautions against children, including his own, developing close emotional relationships with AI chatbots, highlighting issues related to privacy and emotional dependency. While not inherently negative, he suggests that AI-based emotional support requires careful monitoring and regulation, especially for younger users (Altman, *2025*). However, looking at the bright side of AI's practical use, we should be hopeful, following S. Altman's optimism, for a future in which AI serves as a supportive tool that enhances human emotional intelligence.

## Emotional Sensitivity and Student Engagement

As we mentioned, AI systems are expected to develop emotional sensitivity, enabling them to recognise students' emotional states. These systems, including chatbots and AI assistants, will utilise sentiment analysis to tailor their responses, provide motivational support, and alleviate stress (Bergman et al., 2020). For instance, AI could help students in difficult situations by offering personalised advice related to their studies or emotional well-being. Moreover, AI-powered virtual mentors will be able to detect and address hidden emotional barriers, improving the effectiveness of remote learning by creating more personalised experiences for each student (D'Mello & Graesser, 2015, p. 10–20). The integration of AI into educational environments will

enable real-time analysis of students' emotional states, such as monitoring facial expressions and vocal tone during online lectures. By adjusting the pace and content of educational materials accordingly, AI can ensure that students remain engaged and motivated (Pekrun et al., 2017, p. 512).

Such technologies will enable personalised learning and accommodate the cross-cultural diversity of students. By understanding students' emotional states, AI systems will facilitate a more inclusive and comfortable learning environment for students from diverse backgrounds (Alharthi et al., 2020). These systems will serve as real-time translators, breaking down language barriers and enabling students to learn in any language (Vogiatzaki et al., 2022, p. 130–140). As AI becomes an integral part of educational systems, it will help students adapt to new educational standards and enhance their learning experience. If managed appropriately, AI technologies have the potential to transform education, making it more personalised and accessible to a wider range of students, even those from remote areas.

There is a high probability that these technologies will reduce the risk of conflicts in the learning environment due to cultural and language barriers. However, ethical concerns arise regarding the privacy of students' emotional data. To make this scenario a reality, new standards need to be established to regulate the collection and processing of such data (Sweeney, 2002, p. 560). If implemented correctly, these technologies could revolutionise education, making it deeply personalised. This scenario envisions the development of artificial intelligence to the point where it can engage in conversations that are almost indistinguishable from human interactions (Kukich, 2020, p. 42–47). Chatbots will evolve into virtual tutors with natural language capabilities, able to remember conversation context and engage with complex topics. Students will receive personalised learning assistants that help them master difficult subjects independently. In higher education, such systems will replace traditional advisors and lead interactive training. The use of digital avatars will allow the creation of personalised teacher personas with different teaching styles. Voice model development will enable the integration of such AI into lectures, where it will answer students' questions in real time (Lu, 2021). Thanks to enhanced machine learning capabilities, these assistants will be able to adapt to each student's individual learning style. In international universities, such systems will help students from various countries more easily adapt to new educational standards. They will also serve as real-time translators, allowing students to learn in any language. At the same time, there is a risk that students will become overly dependent on AI, which may limit critical thinking (Fazekas & Soós, 2020, p. 22). To prevent this, a balance between traditional learning and the use of such assistants should be integrated (Tegmark, 2017, p. 50–55). Ethical concerns regarding the influence of AI on decision-making and knowledge formation processes

are also important (O'Neil, 2016, p. 5–15). If this scenario is implemented correctly, it will significantly improve access to higher education and personalise the learning process.

In such approach, AI becomes highly specialised, focusing on specific academic disciplines. For example, in medicine, AI will analyse X-ray images and assist students in interpreting results (Esteva et al., 2019, p. 117). In law, AI will generate analytical reports, shortening the time needed to prepare legal documents (Susskind, 2020, p. 88). In engineering, such systems will detect technical errors in projects and suggest corrections. Educators will gain tools to quickly adapt curricula to changes in scientific research. Universities will integrate AI systems in their laboratories, simplifying the conduct of scientific experiments. Automated grading systems will analyse student work based on complex rubrics, minimising subjectivity in grading (Bennett, 2020, p. 47–51). AI experts will help students find optimal solutions for interdisciplinary tasks. In an international context, specialised AI will facilitate collaboration among researchers, simplifying the analysis of large datasets (Binns, 2018, p. 57). It will also help expand access to cutting-edge research for developing countries. However, narrow specialisation means limited flexibility, which could slow down the integration of new knowledge (Brynjolfsson & McAfee, 2014, p. 28, 245). It is necessary to ensure that AI knowledge bases are regularly updated to maintain their relevance. Overall, such an approach to AI exploited within education will increase the efficiency of educational processes but requires careful implementation.

In a similar way to the digitalisation of content in education in the late 90s, educational platforms are also moving towards decentralised networks based on, for instance, blockchain. All educational materials and research results become open, and users train the AI themselves. Students and educators will exchange educational resources, increasing the accuracy of AI assistants. Blockchain will ensure transparency and reliability, eliminating the risk of fraud (Tapscott & Tapscott, 2016, p. 138–139, 220–221). Such systems could be used for the collaborative writing of research papers and reviewing publications. Educational courses will become more interactive, and the process of obtaining diplomas will be automated. As a result, students from different countries will have equal access to high-quality education. However, building such an ecosystem requires significant resources and changes in traditional accreditation approaches. Meanwhile, let us present a short case study, how the fastest implications of AI have been applied into art and creativity:

The Next Rembrandt project used artificial intelligence to create an image in the style of Rembrandt, drawing from his work to replicate his characteristic use of light and shadow (De Vries et al., 2016, p. 50–52). The project demonstrated how AI can imitate classical techniques, blurring the boundaries between tradition and modernity. Beyond visual art, AI systems

such as OpenAI's Jukebox generate musical compositions, while AI poets like GPT-3 challenge traditional notions of literary creativity. These systems show that AI can generate not only images but entire musical or literary works, opening new possibilities for interdisciplinary creative exploration. For example, AI-created poetry contests, such as the AI Poetry Generator by Botnik Studios, offer a blend of humour, randomness, and creativity. Projects like "AI-Da", an AI-powered robot artist, have further expanded the boundaries of AI in visual art, enabling the creation of sculptures with robot precision and AI-generated sketches (Kimbell, 2020, p. 400).

Another example, a more scientific one: AlphaFold, an AI system developed by DeepMind, which effectively predicts protein structures, could be crucial for understanding biological processes (Jumper et al., 2021, p. 583). When in science we begin to create abstract models, such as:

> Human (theories, hypotheses) + Artificial Intelligence (modelling, computations) = automatic discovery

Therefore, AI within such a model may act as a partner in automating processes that previously required a significant amount of time and resources to study. Using machine learning and deep learning, AI can identify new patterns and formulate predictions, opening new scientific horizons. Humans set theoretical frameworks, while AI performs large-scale calculations, allowing faster results. AI can help create new theories and models, not only using existing data but also by abstracting and searching for unconventional solutions (Goodfellow et al., 2016, p. 512). For example, AI can propose new mathematical equations or laws that have not been discovered before, thanks to its ability to find correlations in large datasets. Another example: DeepMind, in its research, tries to predict new mathematical theories by analysing large amounts of abstract data using AI. Thus, AI contributes to art in three main ways:

1. Artists use AI-based software to enhance their work, just like they use brushes or digital programs like Photoshop.
2. AI-generated art can inspire or contribute to creative projects in which human artists guide or refine AI-generated outcomes.
3. Some AI models autonomously generate art from large datasets, raising questions of authorship and creativity (McCormack et al., 2019, p. 4–5). Art generally has a more emotional, intuitive, and subjective component. Collaboration in art with AI often involves experimenting with new styles and searching for creative solutions, where AI serves as a tool that expands the boundaries of human imagination. Science has more rigorous and analytical frameworks. Collaboration here is more focused on using AI to analyse large amounts of data, perform

mathematical modelling, and discover patterns that accelerate scientific discoveries and create new theories.

Overall, both approaches show how combining human creativity with the power of AI can lead to revolutionary achievements in both art and science. AI's role in science is especially transformative, particularly in the areas of data analysis and hypothesis testing. By working alongside human researchers, AI systems can accelerate the discovery of patterns and insights that might otherwise remain hidden. In fields such as medicine and engineering, AI can assist in analysing complex data, predicting outcomes, and offering solutions to challenging problems.

The future of AI in education and creativity holds immense potential to transform how we learn, teach, and create. Emotionally intelligent AI systems will personalise learning experiences, support students' emotional well-being, and facilitate cross-cultural adaptation. In creative industries, AI will act as a collaborative tool, enhancing human creativity and enabling new forms of artistic and scientific exploration. However, ethical challenges related to privacy, data security, and the role of AI in decision-making must be carefully considered. By implementing appropriate ethical guidelines and regulatory frameworks, AI can revolutionise both education and creativity, fostering a more personalised and inclusive future.

## What Will Be the Competences after the Challenges – COVID-19 and AI?

The World Economic Forum's Future of Jobs Report 2025 highlights a growing premium on so-called "human" skills: analytical thinking, creativity, emotional intelligence, and resilience are now among the most demanded competences, while rote and repetitive skills are indeed declining in importance. By 2025, 44% of workers' core skills are expected to change, compared to 35% in 2020. In 2024, UNESCO declared digital lifelong learning a foundational right, emphasising that continuous upskilling – particularly in data literacy, AI fluency, and platform-based work skills – will be essential for employability. In Poland, initiatives such as the "Polish Digital Skills Strategy 2030" are investing over 5 billion PLN in retraining programs focused on AI and digital transition (*Program Rozwoju Kompetencji Cyfrowych 2023–2030*, 2023).

Recently, especially during the COVID-19 pandemic, there have been more and more comparisons that often point too hastily to the context of developing AI: which professions can be replaced by robots and AI. However, one should be careful not to make hasty judgments; vigilance and patience in this respect are advisable. It is not without reason that the modernisation of Polish qualifications was introduced legislatively a few years ago, even yet

before the pandemic time. At the same time, both phenomena were driving each other: the development of communication technologies, facilitated by the COVID-19 pandemic, also indirectly accelerated development in the field of AI, which may replace human medical personnel more effectively, regardless of sanitary or antiseptic regulations and restrictions. Certainly, the revolutionary aspect of WEB 5.0 in the social and human resources context will be the evolution of the globalised network in an emotive direction, disturbingly replacing the employee, e.g., machines that are able to decode virtual content and react to it, and then autonomously decide on the appropriate action (the so-called smart cars, smart homes, etc.) (Brynjolfsson & McAfee, 2014). In the social and human resources aspect, virtual reality or hyperreality may even lead to replacing an employee – a real person – with a hologram or "avatar" (Schroeder, 2017, p. 153–155). Analysts of future competences expect that the future demand for work will focus on unusual and innovative variants of professions requiring high qualifications, interpersonal and creative skills. However, not every employee will be replaced by artificial intelligence. Occupations requiring low qualifications and the so-called "non-routine" work – such as catering or security services – will still require human staff (Scarpetta, 2016).

The rise of AI in the workplace will undoubtedly alter traditional roles and competencies, yet human workers will remain indispensable in areas that require emotional intelligence, empathy, and creativity (Frey & Osborne, 2017, p. 258). For instance, while AI might automate routine tasks, the nuances of human interaction and complex decision-making in fields like healthcare or education are beyond AI's current capabilities. As such, AI will coexist with human employees, complementing their skills rather than replacing them entirely (Chui et al., 2016, p. 1).

In addition, the introduction of AI and virtual environments into workplaces may change organisational structures and redefine employee roles. This will lead to new job categories that involve overseeing and maintaining AI systems or roles requiring unique combinations of human expertise and AI proficiency (Bessen, 2019, p. 3–4). However, as AI technology becomes more pervasive, ethical issues such as data privacy, fairness in decision-making, and the potential for algorithmic bias must also be addressed.

Many reports have already confirmed that the coronavirus pandemic has not only exposed but also exacerbated the "digital divide", including the digital skills gap, between countries, between urban and rural areas, and between women and men. Women, young people, older people and migrant workers have been particularly hard hit in this light. As previous research indicates, the success of an organisation is less influenced by organisational structure and increasingly by the unique, innovative competences of the people who create it and its leaders. This increasingly also applies to public

organisations, including social policy entities. Of course, there is no one best definition of leadership, but it may be worth quoting the definition proposed by Gary A. Yukl – "leadership is a process in which an individual exerts intended influence on other individuals in order to designate, structure and facilitate the activities and relationships occurring in group or organisation" (Yukl, 2006, p. 8). For a long time, considerations on leadership in public institutions treated leaders primarily as administrators whose task was to maintain existing bureaucratic systems, not to create innovations or take the risks associated with introducing changes. Meanwhile, modern times also encourage, and sometimes even force, leaders in managing staff and human resources to seek innovative solutions, expand work-life balance, and bear the risks associated with transforming social reality.

Among many concepts in leadership and business management, an interesting proposition is the idea of servant leadership. Servant leadership means serving both your customers and "work-mates". A leader leads, but his/her strength lies in motivation and very good relationships with co-workers, to whom he/she gives space and freedom, including the freedom to make mistakes. Servant leadership is essentially responsible leadership, in which the interests of the whole or the group are more important than self-interest. An important element of leadership is transformation, i.e., striving for change while maintaining a long-term development perspective and ethical actions (Frączkiewicz-Wronka & Austen-Tynda, 2009, p. 255). Young management staff, for example, in the area of social assistance services, consulting, care... etc. stated that the competences of the managerial staff of the social welfare system that should be improved in the context of the COVID-19 crisis, in terms of leadership are primarily: facilitating (creating conditions) for changes and innovations, as well as interpersonal and communication skills.

Job recruitment agents today focus more on the so-called soft competences – or "social and emotional intelligence" - increasingly emphasised in foreign language literature, which in Polish education are rarely mentioned and discussed in the teaching process at all levels of the educational system. Currently, there is an ongoing discussion at the international and national level – what will be more important in the future of competences – whether "dry", formal qualifications, or skills, such as empathy, communication, interpersonal skills, teamwork, assertiveness, listening skills, argumentation skills, suggestiveness... etc. In this context of the future of key competencies, it is worth quoting Mario Reich, who claims that the future will be determined by competencies ("age of skills & competences") and therefore, in each sphere of life, it is worth seriously considering defining the desired competencies of staff and ways of developing them. According to the Swiss scientist, the best employees, regardless of the industries they represent, will be those who combine the following competencies (Raich, 2016). In this context, according

to the 2024 McKinsey Global Institute report, generative AI could automate activities that account for up to 30% of hours worked across the US economy by 2030, primarily in sectors like customer operations, marketing and sales, software engineering, and R&D (McKinsey Global Institute, 2024, p. 2). Globally, the acceleration of automation may displace up to 400 million jobs by 2030, but it is also expected to create 550–800 million new roles, especially in fields involving AI oversight, human-machine collaboration, and data analysis. New hybrid roles are emerging, such as AI ethicists, prompt engineers, and human-in-the-loop specialists, who focus on reviewing and correcting AI outputs (Chui et al., 2016, p. 1). A 2024 LinkedIn analysis revealed a 3,200% increase in demand for prompt engineers in industries ranging from finance to marketing (LinkedIn, 2024).

The digitisation of society, which will be accelerated by AI technology and is going to again after globalisation of the last decades to increase the professional opportunities for those who are particularly excluded territorially or even by lack of proper infrastructure, as well as to reducing social inequalities. We will see whether AI prompts "democratisation" work in that way and enlarge access to knowledge, competences and science.

## Global AI-Driven Labor Trends: AI Skills and the Labor Market

As s AI systems increasingly take over repetitive and data-intensive functions, the most resilient workers will be those equipped with meta-skills such as adaptability, systems thinking, cognitive flexibility, and interdisciplinary collaboration (World Economic Forum, 2025, p. 5; Mäkelä & Stephany, 2024, p. 1). These capabilities enable professionals to shift roles fluidly, address ambiguous challenges, and synthesise machine-generated outputs into complex decision-making processes.

The rising importance of these overarching skills marks a transition in the labour market: humans must complement machine intelligence rather than compete with it. Adaptability refers to a worker's ability to navigate constant changes in work environments, especially when machines perform traditional, manual tasks. Systems thinking, cognitive flexibility, and interdisciplinary collaboration all enhance the worker's capacity to understand and integrate AI-driven systems in ways that are socially, culturally, and ethically appropriate (World Economic Forum, 2025, p. 5). These meta-skills enable workers to be more agile in a labour market that is increasingly defined by constant technological innovation.

The emphasis on these skills challenges the traditional notion of fixed professional expertise, highlighting the importance of lifelong learning in

future labour markets. The future of work will demand a fusion of domain expertise and AI fluency, leading to the creation of hybrid roles such as "AI translators" – professionals who bridge the gap between algorithmic outputs and business decisions. These hybrid roles are already emerging in critical sectors such as healthcare, law, and public administration (Mäkelä & Stephany, 2024, p. 1). Professionals in these fields must hold a solid understanding of how AI systems operate while simultaneously being capable of interpreting, contextualising, and refining AI-generated insights for human application. Such roles require strong communication skills to relay AI findings to stakeholders and guide organisational strategy, underscoring the necessity of human-AI collaboration.

Emotional intelligence, which year by year has been stressed more often, and ethical judgment are emerging as crucial differentiators in roles involving service, education, leadership, and healthcare (Benioff, 2025, p. 1; S&P Global, 2025, p. 1). These sectors require traits such as empathy, cultural sensitivity, and moral responsibility – qualities that remain essential in complex, human-centred environments. AI, despite its advancements, remains fundamentally limited in replicating emotional nuance, and cannot fully understand or respond to the ethical implications of human actions and decisions. As AI tools become increasingly integrated into hiring processes, education systems, health diagnostics, and customer service, a deep understanding of bias mitigation, fairness, and human well-being will be indispensable (Rigobon & Loaiza, 2025, p. 1). Professionals who can navigate these ethical landscapes will be at the forefront of shaping how AI is deployed in socially sensitive environments. Their ability to inject emotional intelligence into interactions and decision-making processes will remain a key factor in preserving the human aspect of work in an AI-driven world.

A growing demand for competences related to sustainability and ethical AI governance is evident, as AI systems are increasingly deployed in fields such as climate change mitigation, public governance, and community planning (World Economic Forum, 2025, p. 5). Professionals with expertise in areas like algorithmic bias detection, transparency in model design, and awareness of the environmental footprint of AI systems are critical to ensuring that AI is developed and used responsibly. Incorporating sustainability literacy into digital training programs is no longer optional but it is seen as essential for resilience in the face of systemic risks.

The expansion of AI into sustainability solutions and governance frameworks calls for professionals who can guide its development to mitigate environmental damage, ensure social equity, and maintain transparency in decision-making. The evolution of the labour market in response to AI's growing presence has accelerated the shift towards modular learning formats, such as microcredentials and digital badges (LinkedIn, 2023). These

credentials enable workers to quickly acquire specialised skills, such as prompt engineering, ethical AI auditing, and platform economy navigation. Such flexible learning paths also are crucial for adapting to rapidly changing technological environments. Education systems and employers are increasingly adopting these modular learning formats to provide more accessible, timely, and focused upskilling opportunities. By allowing workers to access of specific skills on demand, these credentials can help democratise access to AI-related professions, particularly for underrepresented or non-traditional learners.

Mentioned upskilling models enable workers to stay competitive by providing the tools to engage with AI in ways that meet the needs of evolving industries. According to the 2025 WEF Future Skills Outlook, roles such as AI-augmented project managers, neural interface designers, and synthetic data auditors are expected to grow at rates exceeding 40% by 2030. These positions demand both technical proficiency and adaptive skill sets (World Economic Forum, 2025). Similarly, roles that focus on overseeing human-machine collaboration are expanding across sectors, from marketing and logistics to education. In the educational sector, for example, teachers are integrating

AI-driven co-pilots for lesson planning, while legal professionals rely on generative tools for precedent review. The key theme throughout the discussion on AI-driven labour trends is the shift from traditional labour models to hybrid roles that integrate human intelligence with machine capabilities. These hybrid roles require not only technical proficiency but also emotional intelligence, ethical discernment, and adaptability.

This shift reflects a broader change in how the labour market perceives skills: from the mastery of isolated knowledge to the integration of diverse competencies that enable collaboration between human workers and AI. The importance of meta-skills, particularly emotional intelligence and ethical judgment, highlights the irreplaceable human element in AI-enabled environments. While AI can handle complex data and tasks, it remains incapable of understanding the nuances of human emotion, culture, and ethical considerations. As AI systems become more pervasive in areas like healthcare and education, the role of professionals who can inject empathy and judgment into AI processes will become even more vital. Furthermore, the demand for sustainable AI practices points to a growing awareness of the broader societal implications of AI technologies. Workers who are equipped with the skills to assess and mitigate the environmental and ethical risks associated with AI will be in high demand. This growing focus on sustainability emphasises the need for holistic approaches to AI that consider not only technological advancement but also its societal and ecological impact.

## Conclusion

Young professionals aged 20–29 face significant exposure to automation; in England, over **45% of jobs** held by those aged 20–30 are classified as "high risk" of automation – highlighting the vulnerability of early-career workers (ONS 2017, p.11).

However, they also exhibit greater adaptability and faster upskilling, making them the ideal demographic for AI-augmented professions. While the promise of AI lies in increased productivity, efficiency, and even new avenues of creativity, it raises significant ethical, regulatory, and psychological challenges. As EU institutions finalise the AI Act, balancing innovation with privacy, fairness, and inclusivity will be critical to maintaining societal trust and equity in the labour market.

To sum up, it is worth pointing out once again the relational changes within the work organisation brought about by the recent digital and post-pandemic acceleration, namely the famous Gartner report from 2020–2021 emphasising the importance of the so-called soft skills and emotional intelligence among not only executives and managers, but all employees striving to be leaders in their profession. The report indicates that 70% of managers are overloaded with responsibilities, and only 16% of medium-sized companies have reduced the number of management responsibilities – moving towards better knowledge, integration, understanding and inclusion of employees (Harvard Business Review, 2022, p. 69).

Moreover, the article explores the profound impact of artificial intelligence (AI) on education, creativity, scientific research, and labour markets. It emphasises how AI is reshaping both the nature of work and the skills required to thrive in future job markets. The author highlights several key themes:

1. **Transformation of Labour Markets**:
   - AI automates repetitive tasks, shifting demand toward **meta-skills** such as adaptability, cognitive flexibility, systems thinking, and interdisciplinary collaboration.
   - Many current jobs will disappear, but new ones will emerge – particularly hybrid roles blending human and machine capabilities (e.g., AI translators, ethics consultants).
2. **Education and Emotional Intelligence**:
   - AI systems will increasingly exhibit emotional sensitivity, enabling personalised, emotionally responsive learning.
   - These tools may support inclusive, cross-cultural education but also raise concerns about **privacy, dependency**, and **critical thinking**.

3. **Creativity and Science**:
   - AI is becoming a co-creator in the arts and a research partner in science. Examples include AI-generated art (e.g., *The Next Rembrandt*), music, and discoveries in protein folding (*AlphaFold*).
   - The boundary between human and machine creativity is increasingly blurred.
4. **Post-COVID and Digital Transformation**:
   - The pandemic accelerated the adoption of digital tools and AI, revealing skill gaps and the urgency of lifelong learning.
   - Reports suggest a global shift toward soft skills (empathy, teamwork, communication) and **modular learning** formats (e.g., microcredentials).
5. **Future Competencies and Leadership**:
   - Leadership models must evolve toward **servant leadership** and responsible innovation.
   - The labour market will increasingly value **emotional intelligence**, **sustainability literacy**, and **ethical judgment** alongside technical AI fluency.

In this article, the author calls for a balanced integration of AI into human systems, advocating for ethical governance, adaptive education, and skill development that supports both technological advancement and human well-being. Rather than replacing humans, AI should augment human capabilities – especially in roles requiring creativity, empathy, and critical decision-making.

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Abstract

In this article the author explores the multifaceted role of artificial intelligence (AI) in shaping the future of education, creativity, scientific research, and labor markets. He tries to outline emerging approaches in which AI enhances emotional sensitivity in learning, replaces conventional academic functions, contributes to interdisciplinary research, and serves as a collaborator in artistic and scientific discovery. Additionally, the paper examines the implications of AI and technological transformation on professional competencies, and the global skills landscape. Ethical considerations and the necessity for regulatory frameworks are only mentioned in the context of increasing reliance on AI systems. The author also raises a pivotal issue of new required skills and competences of coping with e-technologies: many jobs will be eliminated whilst others will be created. This means that future workers should be prepared to change their jobs and, perhaps, to work for more than one employer at the same time. The main method of research which is involved within the article is a desk research and review of the latest data and reports; some of them are referring mostly to the Polish labour market's context.

**Keywords:** AI, education, labor market, emotional intelligence, scientific, new skills, meta-skills.

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