

MODERNIZATION OF VOCATIONAL EDUCATION IN THE DIGITAL ECONOMY AND ARTIFICIAL INTELLIGENCE ERA

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Abstract

The rapid development of the digital economy and the large-scale implementation of artificial intelligence (AI) are fundamentally changing the structure of the labour market, forms of employment, and skills demand. These processes have given special importance to Vocational Education systems as a key instrument for preparing and retraining the workforce. The purpose of the article is to analyse the impact of the digital economy and artificial intelligence on vocational education, identify key systemic challenges, and assess the adaptability of vocational education in the global and Georgian contexts.

The research is based on an analysis of secondary data, documents, and analytical reports from international organizations (Organization for Economic Co-operation and Development, World Economic Forum, World Bank, European Commission, Asian Development Bank). The article discusses the role of artificial intelligence in the development of the education system, the main directions of the digital transformation of vocational education, the rise of skills-based hiring, and the importance of micro-credentials. Special attention is paid to the digital readiness and challenges of Georgia's education system, the development of platform-based employment, and the existing gaps in the delivery of vocational education in Georgia.

The research findings show that despite the steps taken to develop digital education in Georgia, the vocational education system still faces significant challenges, including infrastructural problems, limited financial resources, lack of human resources and insufficient integration of digital competencies. Low demand for vocational programs is indicated, which is due to a mismatch between the skills required by employers and the skills provided by the vocational programs.

The conclusion presents policy and systemic development recommendations aimed at transforming the vocational education system to align with the demands of the artificial intelligence era.

Keywords: Digital Economy, Artificial Intelligence, Vocational Education, Digital Transformation.

Introduction

The rapid development of Artificial Intelligence (AI) and the expansion of the digital economy are radically changing the labour market and significantly increasing the demand for new skills. The digital era is bringing changes in all sectors, including the education system. Artificial intelligence offers vast opportunities to enhance the efficiency of the education system and adapt it to modern challenges, improve the quality of education, individualize the learning process, and increase student engagement and motivation.

The rise of the digital economy has contributed to the growth of individuals employed on digital platforms, who represent an increasingly important segment of the workforce. Adapting the vocational education system to prepare the workforce for the jobs offered by the digital economy is of particular importance. Countries and institutions worldwide are actively seeking ways to create sustainable and future-oriented vocational education systems that will support the retraining and development of the workforce to meet the challenges of the artificial intelligence era. Artificial intelligence is significantly changing the job market,¹ workforce preparation - upskilling, integrating digital competencies into

¹ Singer, V., Gupta, V., „AI and beyond: How every career can navigate the new tech landscape “. World Economic Forum, 2025. <https://www.weforum.org/stories/2025/01/ai-and-beyond-how-every-career-can-navigate-the-new-tech-landscape/>

curricula, and implementing fast and flexible learning methods, strengthening public-private sector partnerships and the recognition of micro-credentials, which promotes a flexible and skills-based approach to education.²

At the same time, the implementation of artificial intelligence in the education system is associated with several challenges, including: the need for developing technical infrastructure, retraining staff, developing digital skills, protecting data security, eliminating digital inequality, managing ethical issues and other.

1. The Role of Artificial Intelligence in the Development of the Education System

The European Commission has developed „Ethical Guidelines on the Use of Artificial Intelligence (AI) and Data in Teaching and Learning for Education.“³ The document highlights the diverse roles of AI. The document lists the following capabilities of AI:

- Personalized learning: AI can tailor the learning process to each student's individual needs and abilities;
- Virtual Teacher/Assistant: AI-based systems providing students with individualized assistance and feedback, which contributes to their success;
- Automatic grading: AI can automatically grade student work, which saves teachers time for other important tasks;
- Learning analytics: AI can collect and analyse data about student progress, which allows teachers to make data-driven decisions;
- Adaptive testing: AI-based tests automatically determine student's knowledge level;
- Language Learning: AI can facilitate the language learning process, providing real-time feedback to students and offering personalized exercises;
- Collaborative Learning: AI can facilitate collaboration among students and organize effective group work;
- Diagnostics: AI can help teachers identify students' learning difficulties and provide timely assistance;
- Recommending learning resources: AI can suggest to teachers and students appropriate learning resources, which will help improve the efficiency of the learning process.

2. Digital Transformation of Vocational Education

The European Commission's Joint Research Centre (JRC) actively supports the digital transformation of vocational education and aims to prepare citizens for the digital era. These initiatives include researching trends and technologies, to promote digital transformation and develop tools such as SELFIE WBL (Work-Based Learning), which helps vocational education institutions make the most effective use of digital technologies in the teaching and learning process.⁴ The aim of SELFIE WBL is to help vocational training centers and companies assess their digital capabilities and implement innovative practices, which ensures equipping with essential digital competencies to meet current and future job requirements. Cedefop's (European Centre for the Development of Vocational Training)

[L.s. 05.03.2026].

² Organisation for Economic Co-operation and Development, OECD Skills Outlook 2023: Skills for a Resilient Green and Digital Transition, OECD Publishing, Paris, 2023. <https://doi.org/10.1787/27452f29-en>.

³ European Commission, Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators. Publications Office of the European Union. 2022. <https://data.europa.eu/doi/10.2766/153756> [L.s. 05.03.2026].

⁴ European Commission, Joint Research Centre, SELFIE for work-based learning guidelines. 2024. <https://op.europa.eu/en/publication-detail/-/publication/f614e614-806d-11ef-a67d-01aa75ed71a1/language-en> [L.s 05.03.2026].

projects also emphasize the importance of integrating digital skills into initial vocational education curricula across the EU to ensure vocational education systems are sustainable and future oriented.⁵

The Tacce AI Massive Open Online Course (MOOC) program offers vocational education teachers and trainers understanding of artificial intelligence and its applications in learning and teaching.⁶ The course aims to ensure that vocational education policies reflect the development of AI and prepare the future workforce globally, as the influence of AI and automation continues to grow worldwide.⁷ Such initiatives are crucial for vocational education institutions to become active participants in the implementation of AI technologies, rather than just their users.

3. Skills-based Hiring and Micro-certificates

The labour market is seeing a shift from traditional academic degrees to skill-based hiring, especially in the field of modern and in-demand jobs.⁸ Employers are increasingly valuing specific skills over academic qualifications, which is driving the growth of alternative skill development formats such as internships, online courses, and professional micro-credentials. Global companies like Google, IBM, Microsoft, and AWS have developed professional certificates, to prepare learners for in-demand digital jobs, making it easier for individuals without a traditional higher education degree to become an attractive workforce and get hired.⁹ This approach ensures a rapid response to market changes and promotes continuous learning and professional development.

The global labour market has witnessed a fundamental structural transformation, a point clearly reflected in the World Economic Forum's report, „Future of Jobs Report 2025.“¹⁰ The document emphasizes that the modern economy is witnessing a sharp and irreversible shift from traditional academic degrees to skills-first hiring. This shift is most radically and dynamically manifesting in two priority areas: artificial intelligence (AI) and green professions. As the report notes, „Technological change, the green transition, economic uncertainty, geoeconomic fragmentation and demographic shifts are reshaping the labour market.“¹¹

The global labour market is undergoing a structural transformation, with 22% of current jobs expected to experience churn by 2030. This shift is driven by macrorends like broadening digital access and AI, which are expected to create roughly 170 million new roles while displacing 92 million existing ones. Consequently, 85% of organizations now prioritize up-skilling as a core strategy to overcome significant skill gaps.¹²

A „skills-first“ approach to recruitment is becoming a priority for expanding the global talent pool. 70% of employers now plan to hire based on a candidate's mastery of new competencies rather than traditional credentials. This transition is reflected in the increased use of direct skills assessments and psychometric tests, as businesses find practical capabilities to be better indicators of performance than formal education.¹³

⁵ Cedefop, The future of vocational education and training in Europe: 50 dimensions of vocational education and training: Cedefop's analytical framework for comparing VET. Publications Office of the European Union. 2023. <https://data.europa.eu/doi/10.2801/57908> [L.s. 05.03.2026].

⁶ European Commission, Artificial intelligence in vocational education and training MOOC. Digital Skills and Jobs Platform. 2024. <https://digital-skills-jobs.europa.eu/en/opportunities/training/artificial-intelligence-vocational-education-and-training-mooc> [L.s. 05.03.2026].

⁷ Attwell, G., Roppertz, S., Deitmer, L., MOOCs and AI for VET teachers. Zenodo, 2021. <https://doi.org/10.5281/zenodo.4602924>.

⁸ Bone, M., González Ehlinger, E., Eugenia, Stephany, F., Skills or degree? The rise of skill-based hiring for AI and green jobs. Technological Forecasting and Social Change. Volume 214. 2025, p.2. <https://doi.org/10.1016/j.techfore.2025.124042> [L.s. 05.03.2026].

⁹ Learning Routes, 5 professional online certificates from top MNCs to land jobs: Certifications from Google, IBM, Microsoft & more! 2025. <https://www.learningroutes.in/blog/online-certificates-from-top-mnecs> [L.s. 05.03.2026].

¹⁰ World Economic Forum, Future of jobs report 2025, 2025. https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf [L.s. 05.03.2026].

¹¹ Ibid, p.18. [L.s. 05.03.2026].

¹² Ibid, pp.5,52. [L.s. 05.03.2026].

¹³ World Economic Forum, Future of jobs report 2025. 2025. pp. 52, 61- 63, https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf [L.s. 05.03.2026].

There is a growing trend of removing university degree requirements in favour of verified professional experience. Currently, 81% of businesses rely on work experience for candidate assessment, which is significantly higher than the 43% who still mandate a degree. Professional certificates and short courses are increasingly recognized as viable entry points into the workforce as employers shift focus toward practical, on-the-job achievements.¹⁴

4. Research Methods

The study uses qualitative research methodology based on comprehensive desk research and documents analysis. The study processed and systematized existing secondary data, including from international organizations (Organisation for Economic Co-operation and Development, World Bank, World Economic Forum, European Commission, Asian Development Bank) reports, sectoral scientific publications and government strategic documents. This approach allows to review the impact of artificial intelligence on vocational education in a broad economic and social context.

A comparative analysis was conducted during the research process to study the successful experience of Estonia and Finland in the digital transformation of vocational education. Additionally, the SWOT analysis method was used to assess the readiness of Georgia's educational system, allowing to identify the internal potential and external threats for the implementation of AI technologies. Based on the analysis of information obtained, recommendations for the modernization of vocational education have been formulated.

5. Analysis of International Practices in the Digital Transformation of Vocational Education

The digital transformation of the vocational education system is not just a technological process, but a fundamental cultural and pedagogical shift. Analysis of international practices shows that successful countries focus not only on providing digital infrastructure but also on enhancing teachers' digital skills and the ethical integration of AI into the teaching process.

5.1. „Digital Mirror” and Institutional Readiness, Estonia

Estonia, considered a leader in digital education within the European Union, has created a unique ecosystem for the vocational education sector. The „Digital Mirror” tool, developed by the Council for Education and Youth (Harno), is a comprehensive self-assessment platform for digital transformation readiness, based on the European DigCompEdu framework.¹⁵

The strength of the Estonian model lies in allowing vocational education institutions to self-assess against five key dimensions: Strategic Management, Pedagogical Practice, Digital Infrastructure, Student Assessment Methods, and Student Competence. This methodology facilitated the personalization of teachers' individual continuous professional development (CPD) plans. In Estonian vocational education colleges, teachers use AI to modify learning curricula in real time so that programs can respond to the changing vacancies in the Information and Communication Technology (ICT) sector.

5.2. The „Elements of AI” Project and Pedagogical Symbiosis, Finland

The Finnish experience is unique, AI education in Finland has become a universal civil right. „The Elements of AI” project, launched as a partnership between the University of Helsinki and the technology company Reaktor, aimed to provide basic AI skills training for the general public (including teachers). „Elements of AI” has already helped one million people acquire a basic understanding of artificial intelligence. The online course, created by the University of Helsinki and the educational

¹⁴ Ibid, pp. 62- 64. [L.s. 05.03.2026].

¹⁵ Harno, Education and Youth Board of Estonia, Digital Mirror (Digipeerel): Self-evaluation framework for educational institutions. 2023. <https://digipeerel.ee/> [L.s. 05.03.2026].

company MinnaLearn, is free and available to everyone. It provides easy to understand information and practical examples about artificial intelligence.

The course has attracted a diverse group of users: 40% of participants are women, more than 25% of users are over 45 years old. Elements of AI continues to teach the fundamentals of artificial intelligence and further develops the course to meet business needs. In Finland 250 companies have already trained their employees with this course.¹⁶

6. Achievements and Challenges of Digitizing Georgia's Education System

According to the report of the Georgian Ministry of Education, Science and Youth, the following achievements are listed in the digitalization of the vocational and higher education systems:

- Digital and blended learning concept was developed within the vocational education system, which served as the basis for the development of an LMS platform where up to 50 training courses are hosted. 18 sectoral networks were created, where 1,300 teachers collaborate digitally, and 360-degree electronic self-assessment system has been implemented in 76 institutions. A regulation for distance learning was approved at the legislative level;¹⁷
- The Uni-Grants system was launched to manage higher education, system ensures the automated calculation of grants, For the first time, policies for e-learning and the maximum number of credits were defined by law. In the field of sciences, an open repository, openscience.ge is being developed, digital profiles for researchers and web portals for scientific units were created.¹⁸

The challenges noted include technical and infrastructural failures, and a lack of human and financial resources, which hinder the monitoring of strategic plans and implementation, as well as the commercialization of technologies on the international market, which requires a great deal of time and complex procedures.¹⁹

According to a World Bank report, the digital readiness of Georgia's education system is characterized by the following scores (on a 1 - 4 scale) for the five main assessment criteria (pillars):²⁰

1. Leadership and Governance (1.4)
There is no comprehensive strategy for integrating digital solutions into education reform. Weak management, an insufficient strategy, and frequent staff turnover.
2. Enabling Infrastructure (1.3)
Limited internet access and a lack of access to digital devices, especially in rural areas.
3. Digitally Enabled Education Services Delivery and Analytics (1.0)
Lack of digital and data literacy skills among students, teachers, and administrators. Insufficient computers for educational use. Learning resources are not engaging and interactive.
4. Human Capacity (1.9)
Lack of human resources with intermediate and high-level technological skills in educational institutions. Insufficient plan for digital skills development. Limited access to digital skills and data literacy training for teachers and administrators.
5. Education Technology (EdTech) Market and Business Models (1.2)
Low private sector involvement. There is no systematic method to ensure that digital products and services meet quality and safety standards. Efficiency and the costs of digital solutions are not monitored.

¹⁶ Minna Learn, Elements of AI has introduced one million people to the basics of artificial intelligence. 2023. <https://www.minnalearn.com/2023/05/elements-of-ai-has-introduced-one-million-people-to-the-basics-of-artificial-intelligence/> [L.s.05.03.2026].

¹⁷ Ministry of Education, Science and Youth of Georgia, Monitoring Report for 2023 of the 2022-2024 Action Plan of the Unified National Strategy for Education and Science for 2022-2030. 2025, pp. 56-70. <https://mes.gov.ge/content.php?id=7755&lang=geo> [L.s. 05.03.2026].

¹⁸ Ibid, pp. 70, 77, 83. [L.s. 05.03.2026].

¹⁹ Ibid, pp. 78, 85. [L.s. 05.03.2026].

²⁰ World Bank, Georgia Education System digital readiness assessment. 2022, pp. 4-6. <https://documents1.worldbank.org/curated/en/099102424122038117/pdf/P17353010189630e192ab1f161baa8aff3.pdf> [L.s. 05.03.2026].

According to a World Bank report, the digital transformation readiness of Georgia's education system is at „emerging “level.²¹ Many issues need to be resolved especially regarding infrastructure, human resources, business models, and private sector involvement.

7. SWOT Analysis of the Process of Implementing Artificial Intelligence in the Georgian Education System

SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis is based on data from the World Bank report „Georgia Education System Digital Readiness Assessment “²² and focuses on the implementation of Artificial Intelligence (AI) in the field of education in Georgia.

7.1. Strengths

- Growing digital infrastructure. Work is underway in Georgia to develop digital infrastructure, which lays the foundation for integrating AI.
- Strategic government documents emphasize the importance of developing digital education, which creates a favourable environment for the implementation of innovative technologies, including AI.
- The presence of a qualified high-tech workforce in the country that can be attracted to AI development.

7.2. Weaknesses

- Low level of digital literacy: A large portion of the population, including teachers and students, has digital literacy issues, which will hinder the effective use of AI.
- Despite some progress, internet access and quality remain a problem, especially in rural areas. This will limit the use of AI-based tools.
- Lack of financial resources: Implementing AI in education requires significant financial investment, which is limited at this stage.
- Lack of e-learning resources: The scarcity of AI-based educational resources available in Georgian will hinder the widespread adoption of the technology.

7.3. Opportunities

- Personalized Learning: AI will facilitate the creation of personalized learning experiences tailored to the individual needs of each student.
- Automation: AI can automate routine tasks such as grading students and preparing d learning materials, which will leave teachers more time for creative and individualized approaches.
- Increased Accessibility: AI can make education more accessible for students with disabilities and for those living in remote regions.
- International Cooperation: International cooperation with other countries and organizations will facilitate the implementation of best practices and the sharing of experiences.
- Private Sector Involvement: Private sector involvement in education will help attract funding and implement innovative projects.

²¹ World Bank, Georgia Education System digital readiness assessment. 2022. p. 4.
<https://documents1.worldbank.org/curated/en/099102424122038117/pdf/P17353010189630e192ab1f161baa8aff3.pdf>
[L.s.05.03.2026].

²² Ibid, [L.s. 05.03.2026].

7.4. Threats

- The implementation of AI in education increases cybersecurity risks, such as data breaches and the unauthorized use of personal information.
- Ethical issues, such as algorithmic bias and data privacy.
- Replacing Teachers: There is a fear that AI could reduce teachers' jobs; however, it is more likely that AI will help teachers perform their work more efficiently and creatively.
- Global Challenges: Global challenges can negatively impact the education system.
- Economic Crisis: An economic crisis can limit funding for the education sector and hinder its development.

8. The Development and Landscape of Platform Work in Georgia

Platform employment represents a new form of employment in the digital economy, which is facilitated by digital technologies and connects individuals seeking a specific task, product, project, or service with those who offer them through online platforms or mobile applications. In Georgia, workers on digital platforms complete various tasks of different complexities, both on-site and remotely, which are provided through the use of these platforms.²³ This model includes online work where services are provided remotely (for example, freelancing), as well as on demand on-site work, which is carried out through platforms at a specific physical location, such as ordering a taxi or a food delivery service.²⁴

Analysis of platform work reveals both significant opportunities and attendant risks across several key categories. In terms of income, workers are given access to a global market, which often involves receiving payment in foreign currency, but on the other hand, this model is characterized by unpredictable earnings and a lack of social protection mechanisms.²⁵

The flexibility of the work process and schedule allows for independent time management. Technological progress and professional development are another aspect of platform employment, workers have access to on-the-job training and artificial intelligence (AI) for practical application, but at the same time, they face the challenge of algorithmic management and being dependent on ratings/assessments.²⁶

9. The Dynamics and Challenges of Vocational Education in Georgia in the Era of the Digital Economy

The vocational education system of Georgia is actively striving to adapt to the challenges of the digital economy and the demands of the era of artificial intelligence. According to the Georgian Ministry of Education, Science and Youth, as of September 1, 2025, there were 66 authorized vocational educational institutions operating in the country.²⁷ The educational institutions cover a wide range of professional fields, with digital skills programs offered by various colleges, which are listed in the 2023 Catalogue of Vocational Programs.²⁸ It is noteworthy that the Georgian vocational education system is

²³ European Training Foundation [ETF]. New forms of employment in the Eastern Partnership countries: Platform work Georgia, 2021. p.6. https://www.etf.europa.eu/sites/default/files/2021-06/platform_work_georgia_0.pdf [L.s. 05.03.2026].

²⁴ Ibid, p. 5. [L.s. 05.03.2026].

²⁵ International Labour Organization [ILO], World Employment and Social Outlook 2021, 2021. pp. 24-25. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40dgreports/%40dcomm/%40publ/documents/publication/wcms_771749.pdf [L.s. 05.03. 2026].

²⁶ Graham, M., Woodcock, J., The Gig Economy: A Critical Introduction, 2020. <http://acdc2007.free.fr/woodcock2020.pdf> [L.s. 05.03.2026].

²⁷ Ministry of Education, Science and Youth of Georgia, Vocational Educational Institutions. <https://www.mes.gov.ge/content.php?id=215&lang=geo> [L.s. 05.03.2026].

²⁸ Ministry of Education, Science and Youth of Georgia, Catalogue of Vocational Programs 2023. <https://www.mes.gov.ge/uploads/2023/katalogi-2023.pdf?csrt=210705182923194134> [L.s.05.03. 2026].

trying to respond to the demands of the digital market, and a significant overall trend is the development of short-term modules focused on new professions.

The Georgian Ministry of Education, Science and Youth has developed the „Vocational Education Strategy for 2024-2030“.²⁹ The strategy highlights the importance of developing digital skills, modernizing the vocational education system, and leveraging the potential of artificial intelligence.

According to a report by the Asian Development Bank, Georgia's vocational education system faces challenges; one of the significant problems is low participation of young people in vocational education programs, although the trend is increasing.³⁰ The low demand for vocational education courses stems from several factors, including a mismatch between the skills demanded by employers and those provided by the vocational education system.³¹

The quality of vocational education is further hampered by a lack of qualifications, competencies, and professional development opportunities for vocational teachers.³² As of 2023, there were 5,423 teachers in the system, half of whom were over 50 years old, while 47% worked fewer than 10 hours per week, often seeking additional income due to low hourly pay.³³

Furthermore, the infrastructure and equipment available for vocational education are often insufficient to conduct advanced technical training, which affects the ability to deliver relevant vocational education.³⁴

Recommendations

The challenges can be overcome with a comprehensive action plan, which is recommended to be based on the following aspects:

- Defining a digital governance framework, forming working groups, and implementing a system of key performance indicators (KPIs);
- Developing a Public-Private Partnership (PPP) model, attracting investments, and increasing the involvement of international organizations;
- Ensuring full 5G network coverage, implementation of AI-based learning platforms (LMS);
- Adapted for the Georgian language and the languages of national minorities, Creation of personalized AI resources;
- Human capital retraining and talent attraction;
- Regular training for teachers and managers in digital skills;
- Developing a strategy to attract AI researchers and data analysts, establishing special scholarships and competitions;
- Integration of Big Data and machine learning; support for startups and research projects;

²⁹ Ministry of Education, Science and Youth of Georgia, 2024-2030 Vocational Education Strategy. 2024.

<https://mes.gov.ge/publicInfo/wp-content/uploads/2024/10/2024-2030-%E1%83%9E%E1%83%A0%E1%83%9D%E1%83%A4-%E1%83%A1%E1%83%A2%E1%83%A0%E1%83%90%E1%83%A2%E1%83%94%E1%83%92%E1%83%98%E1%83%90.pdf> [L.s. 05.03.2026].

³⁰ Asian Development Bank, Modern skills for better jobs sector development program, Sector assessment (summary): Vocational education and training, 2024. pp. 2-3. <https://www.adb.org/sites/default/files/linked-documents/52339-003-ssa.pdf> [L.s. 05.03.2026].

³¹ Asian Development Bank, Modern skills for better jobs sector development program, Economic assessment. 2024. p.1. <https://www.adb.org/sites/default/files/linked-documents/52339-003-ld-02.pdf> [L.s. 05.03. 2026].

³² Asian Development Bank, Modern skills for better jobs sector development program, Sector assessment (summary): Vocational education and training, 2024. pp. 4-5. <https://www.adb.org/sites/default/files/linked-documents/52339-003-ssa.pdf> [L.s. 05.03. 2026].

³³ Ibid, p. 2. [L.s. 05.03.2026].

³⁴ Asian Development Bank, Modern skills for better jobs sector development program, Economic assessment. 2024, p.1. <https://www.adb.org/sites/default/files/linked-documents/52339-003-ld-02.pdf> [L.s. 05.03. 2026].

- Implementing data protection ethical principles and cybersecurity awareness campaigns;
- Implementing a periodic feedback system, evaluating pilot projects, and continuously up- dating the system based on the results obtained.

Conclusion

In the era of Artificial Intelligence (AI), vocational education system plays a crucial role in workforce development. Globally, there is a noticeable push towards short training programs, digital transformation, public-private partnerships, and micro-certificates, which promote flexible and competency-based learning. Technological progress no longer allows for the luxury of long, static curricula, prioritizing continuous learning and adaptability.

The integration of AI into the vocational education system is a two-way process. On the one hand, this involves optimizing the learning process itself through adaptive platforms; on the other, equipping students with the skills necessary to collaborate with artificial intelligence. In this context, micro-credentials become an innovative tool that allows employees and students to acquire specific, high-tech skills in a short time, such as data analysis, ethical use of AI or managing digital operations. Close partnerships between the public and private sectors ensure that educational institutions keep pace with the demands of the economy.

In Georgia, there is also an awareness of these challenges and corresponding steps are being taken, which is reflected in the offering of digital programs and national plans for developing digital competencies. The current efforts need to become more systematic. It is important that AI-related skills do not remain the sole prerogative of information technology professions. Artificial intelligence must also penetrate sectors such as agrotechnology, civil engineering, service industry and other. To this end, it is essential to launch large scale teacher training programs so that they can integrate AI tools into their daily teaching.

It is important not to perceive Artificial Intelligence (AI) as a threat that will replace jobs, but rather as an opportunity that frees people from routine labour, creates new types of work and professions, and provides opportunities for development.

With the right approach and adaptation to modern demands, Georgia's vocational education system can shape a highly qualified and flexible workforce that will fully take advantage of all the opportunities offered by the digital economy and thrive in the era of artificial intelligence. This is a process where education and technological progress unite to ensure the continuous development of the workforce and the progress of the country.

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