

STAGES OF THE DEVELOPMENT OF DIGITAL ETHICS IN UZBEKISTAN: AN ACADEMIC ANALYSIS

Ahmadova Kamola Ahmad qizi

Doctoral student of National Institute of Pedagogics and Character

education named after Kori Niyoziy

Abstract: This expanded article provides a deeper scientific analysis of the evolution of digital ethics in Uzbekistan from the initial introduction of ICT to the era of artificial intelligence, cybersecurity, and digital governance. It highlights historical factors, legislative reforms, institutional initiatives, socio-cultural changes, and international influences shaping digital ethical standards in the country.

Keywords: Digital ethics, Uzbekistan digitalization, ICT development, Cybersecurity, Data privacy, Digital citizenship, Digital literacy, Personal data protection, Media literacy, Algorithmic transparency, Ethical digital culture

Introduction. Digital ethics refers to the moral principles guiding behavior in digital environments. It includes data privacy, cybersecurity, responsible online communication, intellectual property protection, and ethical use of emerging technologies. Uzbekistan's rapid digitalization has required the development of comprehensive ethical norms. This article examines the stages of this development in detail and connects them with global best practices. In the concept of the development of the higher education system of the Republic of Uzbekistan until 2030, the educational process includes individualization based on modern digital technologies, the development of distance education services, and the wide implementation of innovative teaching technologies [3]. The approach based on digital technologies plays an important role in the development of digital competence of pedagogical personnel. In this regard, the analysis of research shows that there is a need to develop the digital competence of pedagogical personnel. Digital Learning Environment (DLE) is a set of digital tools and technologies used to organize, manage and support the educational process. Digital competence is a broader concept and is a set of competencies that includes activities for working with educational resources in a digital environment, including creating and collecting data, processing and analyzing them, as well as automating processes using digital technologies

1. Early Technological Foundation and Ethical Awareness (2010–2016)

1.1 Development of basic ICT infrastructure

Uzbekistan's digitalization began with the expansion of ICT networks, introduction of computers in schools, and increased mobile connectivity. Internet penetration grew significantly, but ethical awareness lagged behind.

1.2 Ethical challenges during early digital use

Common issues included:

- Limited understanding of online privacy
- Unauthorized sharing of personal photos and videos
- Low awareness of digital footprints
- Increase in cyberbullying among youth
- Spread of misinformation due to low media literacy

2. Formation of Legal and Regulatory Frameworks (2017–2020)

2.1 Legislative milestones supporting digital ethics

Uzbekistan introduced key laws:

- Law “On Personal Data” (2019) — foundational regulation for protecting citizens’ data
- Law “On Electronic Government” — ensuring transparency in digital public services
- Cybersecurity resolutions — standardizing digital safety across institutions

2.2 Digital government expansion

E-government services such as my.gov.uz transformed interactions between citizens and the state. While increasing efficiency, they also highlighted ethical concerns regarding confidentiality, accuracy of data processing, and equitable access.

3. Societal Digitalization and Expansion of Digital Culture (2020–2023)

3.1 Impact of the COVID-19 pandemic

Digital transformation accelerated dramatically:

- 7 million students switched to remote learning
- Educators adapted to digital content requirements
- Citizens relied on digital banking and communication tools

Ethical issues:

- Plagiarism and cheating in online education
- Exploitation of personal data on social networks
- Exposure to unreliable information

3.2 National programs to improve digital literacy

Training programs focused on:

- Online safety for children and parents
- Ethical content creation
- Responsible social media behavior
- Critical evaluation of information sources

4. Advanced Digital Ethics and AI Regulation (2023–Present)

4.1 AI integration and data governance

The use of AI in government services, banking, and education requires:

- Transparent algorithms
- Prevention of bias
- Ethical data analysis
- Monitoring of machine-generated decisions

4.2 Strengthening cybersecurity and digital sovereignty

Key areas:

- National cybersecurity framework
- Public–private partnerships in cyber protection
- Training of cybersecurity specialists
- Prevention of identity theft and cybercrime

4.3 Academic and societal engagement

Universities and research institutions offer courses in:

- Digital ethics
- Media literacy
- Cybersecurity psychology

Civil society promotes online safety, especially for vulnerable groups.

5. Comparative Perspective: Uzbekistan and Global Standards

Uzbekistan’s approach increasingly aligns with:

- EU GDPR data protection principles
- UNESCO digital citizenship competencies

- OECD responsible AI guidelines

The country's youthful population and rapid digital reforms make it a unique model in Central Asia.

Conclusion. The level of development of the digital competence of the teaching staff was evaluated according to the open online course "Digital Competencies in Pedagogical Activities". Their indicators were analyzed mathematically and statistically using the Kramer-Welch criterion. According to the results of the analysis, it was found that all criteria (motivational, constructive, integrative and reflexive) were higher compared to the results of the entrance test before the experiment and the results of the exit test after the experiment. This means that the proposed research is effective.

Uzbekistan has progressed through four major stages in the development of digital ethics:

1. Awareness stage — growth of ICT, minimal ethical regulation.
2. Regulatory formation — creation of laws and frameworks.
3. Cultural expansion — growing public awareness and digital literacy.
4. Integration stage — AI ethics, cybersecurity, academic research.

Digital ethics is essential for protecting citizens, ensuring transparency, and supporting sustainable digital development. Continued efforts are necessary in AI governance, child online safety, ethical journalism, and global cooperation.

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