

Challenges and Strategies for the Advancement of Legal Governance in Universities in the Era of Digital Intelligence

Yating Liu

Legal Affairs, Beijing Information Science and Technology University, Beijing, China
Email: 149030641@qq.com

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Abstract

The advent of digital intelligence technology marks a profound shift in cognitive and intellectual paradigms, presenting both opportunities and challenges for the modernization of governance frameworks and capabilities within universities. In this era, higher education faces evolving demands and transformations in principles of fairness, justice, and security, while grappling with issues such as the foundational basis for governance, the “agency” of intelligent machines, and methods of governance. To facilitate the reciprocal empowerment of “digital intelligence” and “rule of law”, it is imperative to advance governance concepts, guiding “legalization” with an informed “digital intelligence perspective”. This involves enhancing top-level strategic design and legislative reform, improving the digital intelligence capabilities of university governance, and fostering education in digital intelligence legal culture, thereby consistently advancing the standardization and legalization of smart universities.

Keywords

Digital Intelligence Era, Universities, Legal Governance, Digital Intelligence Perspective, Smart Campus

1. Introduction

The Digital Intelligence Era denotes a phase where society progressively integrates informatization, digitalization, and intelligence, driven by pivotal technologies such as big data, cloud computing, artificial intelligence, the Internet of Things, and blockchain. These digital intelligence technologies, collectively encompassing digital and intelligent innovations, have been extensively adopted and are significantly reshaping societal operations in the current technological revolution. The

shift towards digital transformation in higher education is essential to meet the developmental demands of the digital intelligence era and to achieve educational modernization. In 2019, the Central Committee of the Communist Party of China and the State Council issued “China Education Modernization 2035”¹, advocating for “accelerating educational reform in the information age and advancing changes in educational governance methods”. In the report of the 20th National Congress, General Secretary Xi Jinping underscored the need to “advance the digitalization of education and establish a learning society and a nation committed to lifelong learning for all”².

The advancement of digital intelligence technologies is intrinsically linked to the safeguarding role of the rule of law. The digital transformation of higher education necessitates an enhanced focus on legal frameworks, embedding legal reasoning and methodologies throughout the entire governance process and across all facets of university administration. This integration aims to achieve a dual empowerment of “digital intelligence” and “rule of law”, thereby advancing the modernization of governance systems and capacities in higher education. This paper seeks to examine the transformation of the educational rule of law concept in the digital intelligence era, assess the current status and challenges of legal construction in higher education influenced by digital intelligence technologies, and offer recommendations for enhancing legal frameworks in universities during this era.

2. Evolution of Educational Legal Principles in the Era of Digital Intelligence

(1) Educational Equity

In the era of digital intelligence, higher education is no longer an “ivory tower” reserved for “a select few to acquire advanced knowledge.” The demystification of higher education has significantly influenced the traditional notion of “equity”. In this era, educational equity extends beyond merely the “admission” threshold, increasingly focusing on the allocation process of educational resources and educational outcomes, which are crucial for assessing the sustainable development of higher education. In the phase of high-quality development, opportunity equity incorporates dimensions of quality and appropriateness, highlighting their inseparable connection in the distribution of opportunities (Wang, 2024a). As a legal principle, equity in education is transitioning from “equal opportunities” to “equity of outcomes”. The ability to provide high-quality digital educational resources and offer personalized, needs-based training programs has become a benchmark for “substantive equity”. This implies that equity is “equity with quality”,

¹Central Committee of the Communist Party of China, State Council. China Education Modernization 2035 [EB/OL]. (2019-02-23) [2024-10-24].

https://www.gov.cn/zhengce/2019-02/23/content_5367987.htm

²Holding High the Great Banner of Socialism with Chinese Characteristics and Striving in Unity to Fully Build a Modern Socialist Country—Report at the 20th National Congress of the Communist Party of China [EB/OL]. (2022-10-25) [2024-09-22].

https://www.gov.cn/xinwen/2022-10/25/content_5721685.htm

and quality is “quality premised on equity” (Liu, 2021). The modernization of education in the digital intelligence era should emphasize “inclusion for all”, offering students customized and personalized educational programs.

(2) Educational Justice

The transformation brought about by digital intelligence technologies has further catalyzed the awakening of public “rights consciousness”, leading to an increasingly strong demand for justice among citizens. On one hand, citizens are paying more attention to the protection of rights in virtual spaces. Compared to physical spaces, cyberspace influences various citizen rights through community aggregation, where algorithmic evaluations, social assessments, and public opinion-driven “digital profiles” in virtual spaces directly impact individuals’ real lives. For instance, the government of Washington D.C. in the United States erroneously dismissed a widely recognized teacher based on algorithmic evaluation of teacher performance (Xu, 2018). On the other hand, digital intelligence technologies have facilitated the dissemination of legal knowledge. Both teachers and students can not only promptly retrieve various legal provisions but also use intelligent technologies to quickly obtain methods for solving problems by describing events.

(3) Educational Security

The governance focus on “security” issues within higher education institutions has expanded beyond the physical campus to include network security, personal information protection, and privacy security, which are critical to the interests of faculty and students. As digital and intelligent technologies advance, network security risks have become more apparent. Universities are increasingly facing incidents such as hacker attacks on campus networks, the spread of viruses, theft, alteration, and misuse of personal data of faculty and students, as well as online fraud. In May 2024, EDUCAUSE, a leading IT organization in American higher education, released the “2024 Horizon Report: Teaching and Learning Edition”, which introduced numerous new keywords to better capture the latest developments in higher education, particularly emphasizing concerns about network security and privacy within the context of technological trends (Xu & Duan, 2024).

3. The Current Situation and Challenges of Legal Construction in Higher Education in the Era of Digital Intelligence

(1) Governance Basis

The establishment of “good laws” is essential for achieving “good governance”. The integration of digital intelligence components into the educational legislative framework is a pressing need in contemporary times. In recent years, China has promulgated a series of laws and regulations that provide the foundational principles and strategic directions for the digital transformation of higher education institutions.

In terms of specialized legislation, the Civil Code has introduced a dedicated

section on personality rights, specifically addressing “privacy rights and personal information protection”. The “Cybersecurity Law” outlines the fundamental requirements for maintaining cybersecurity. The “Data Security Law” focuses on risk management in data processing activities, while the “Personal Information Protection Law” delineates clear rules for handling personal information and defines the rights and responsibilities of all parties involved in information processing. Some universities have developed specific management guidelines, such as Peking University’s “Administrative Measures for Institutional Information Data”, Tsinghua University’s issuance of the “Data Security Law”, Yangzhou University’s “Personal Information Protection Management Measures”, and Jilin University of Finance and Economics’ “Data Security Management Measures”. Nonetheless, the majority of universities have yet to establish relevant documentation, resulting in a governance process that lacks standards tailored to the unique circumstances of each institution.

In terms of legislative content, there is a pressing need to refine laws to match the distinctive features of digital intelligence in the education sector. Firstly, the concept of “openness” is crucial. Unlike traditional education models that prioritize centralization, synchronization, and standardization, smart education aims to merge physical and social spaces to create new, learner-centered educational environments.³ Digital intelligence technologies enable education to transcend geographical, temporal, and disciplinary limitations. This necessitates that universities establish systems for digital learning quality certification and credit recognition, with explicit guidelines on certification qualifications, learning content, mutual recognition standards, and certificate acquisition processes. Secondly, the aspect of “intelligence” comes into play. In traditional educational settings, teachers are tasked not only with teaching but also with writing textbooks, grading assignments, and managing misconduct. The integration of “intelligence” allows teachers to “engage, disengage, and switch roles more freely within digital spaces” (Wang, 2023). However, future educational interactions between teachers and students will involve complex dynamics of purpose, agency, methods, and spatio-temporal considerations (Zhang & Huang, 2024). In virtual environments, teachers and students may encounter role ambiguity, relationship deconstruction, and emotional detachment. For instance, at the Georgia Institute of Technology, chatbots have been used in teaching activities, leading to some students being unaware that their teaching assistant was an AI robot (Seldon & Abidoeye, 2019). Legislative reforms and institutional safeguards are urgently needed to address issues related to educational objectives, teaching philosophies, codes of conduct, standards for intelligent media usage, and systems for evaluating teaching quality.

(2) The Subjectivity of Intelligent Machines

The advancement of artificial intelligence has endowed machines with the capability for “autonomous decision-making” through deep learning, and they may

³Chinese Academy of Educational Sciences. China Smart Education Development Report (2023) [M]. Education Science Press, 2024: 3.

potentially replace certain managerial roles entirely in the future. The progression of machine intelligence and their evolving roles cannot be overlooked. As intelligent machines assume the role of management entities, several issues arise in the context of academic and educational governance: Firstly, the mechanical nature of management fails to meet the emotional and value-based needs of individuals, lacking a humanistic approach. For example, when evaluating and providing feedback on students' errors in knowledge, it is essential to consider aspects of "emotionality" and "value", rather than solely focusing on the criteria of "immediacy" and "error correction" (Wang, 2024b). Secondly, intelligent technologies are not infallible and may lead to judgment errors and unjust decisions. In cases of disputes or unforeseen events, the question arises as to who should assume legal responsibility. For instance, if a school contract automatically approved by an intelligent system leads to contractual negligence and breach of contract due to biases in technical identification related to the interpretation of terms, legal loopholes, contract background, or circumstances of performance, what measures should be taken to promptly remedy and mitigate damages and assume liability for compensation?

In reality, intelligent technology itself should be constrained and become an object of governance. Only under the premise of controllable risks can technology be empowered to create more opportunities. Through brain-computer interfaces, a "two-way upload" between human intelligence and artificial intelligence will be realized, with machines simultaneously becoming educators and learners (Dong & Wei, 2021). Therefore, the algorithms, data analysis models, code writing, and automation technologies on which intelligent systems rely must also comply with safety measures and ethical principles to ensure that the self-evolution path of artificial intelligence does not deviate from its intended design.

(3) Governance Methods

Digital intelligence technology has a wide range of applications in the legal field: not only are there search engines (LexisNexis, Westlaw) that help users find laws, regulations, case studies, and literature, but there are also intelligent contract management tools (Contract Analysis and Review) that automatically identify contract risks, and legal prediction tools (Predictice, LexMachina). These intelligent tools provide users with efficient, accurate, and convenient legal services and decision support. Currently, most universities are still in the exploratory phase of integrating digital intelligence technology into the construction of the rule of law, primarily focusing on the contract management aspect. The scope of departments and business areas covered by digital intelligence work is limited, with university information systems exhibiting a "siloed" architecture of separate constructions and independent operations, leading to the proliferation of "data islands". Additionally, data standards are not unified, data structures are inconsistent, and there are differences in data storage, management, and retrieval systems (Ding, 2024). Work is mainly confined to updating application systems and daily operations, resulting in a phenomenon of prioritizing reconstruction over utilization, and a

disconnect between construction and use, lacking overall planning and coordination.

4. Pathways for Enhancing the Rule of Law in Higher Education in the Era of Digital Intelligence

(1) Steering “Legalization” with the Appropriate “Digital Intelligence Perspective”

The digital intelligence perspective represents the essential understanding, value system, and ethical guidelines that individuals should possess in a society driven by digital intelligence. Fundamentally, it reflects the interactions between humans and machines, as well as interpersonal relationships. The transformation and advancement of higher education necessitate the adoption of a correct “digital intelligence perspective” in academic and educational practices. This involves integrating these concepts into the practice of governing educational institutions by law, thereby fostering a harmonious and mutually beneficial relationship between humans and machines, and among individuals.

Firstly, the dynamic between humans and “machines”. The author argues that when discussing the legal status of machines, it is essential to consider the broader societal interest, aiming to establish a balanced mechanism that supports social interaction and collaborative development within a community composed of diverse individuals. No matter how digital intelligence technologies advance, they must remain aligned with their fundamental role as “human-made tools”. From an “instrumental pragmatism” standpoint, digital intelligence technologies significantly influence and alter educational paradigms. Innovations such as multi-dimensional interactive teaching environments in virtual reality, data-driven learning analytics, and immersive experiences enabled by metaverse technology represent new paradigms for educational reform driven by technological advancements. Stakeholders including policymakers, administrators, educators, and students should embrace new technologies with an open and proactive attitude, actively engaging with the latest technological developments, and continuously enhancing their understanding and skills to effectively utilize these technologies. From an “instrumental rationalism” perspective, the misuse of tools like AI-assisted paper writing can severely undermine personal development and educational quality. It is crucial to approach new technologies with a rational and cautious mindset, with a focus on long-term benefits, ensuring that technological advancements are leveraged for personal growth and societal progress.

Secondly, the focus is on interpersonal relationships. As digital intelligence technology becomes increasingly integral to human life, what principles should govern coexistence between individuals? On one hand, it is crucial to acknowledge the personal rights associated with “digital profiles”, including portrait rights, reputation rights, privacy rights, and data property rights. Developing a mindset geared towards lifelong learning is essential, as is improving data literacy, mastering new knowledge and technologies, and being proactive in identifying and

mitigating risks. On the other hand, there is a need to heighten awareness of digital responsibilities, ensuring that technological tools are not used to abuse rights or infringe on the legitimate rights and interests of others. In dealing with information from uncertain sources, it is important to cultivate critical thinking skills and enhance humanistic literacy.

(2) Advancing Top-Level Design and Legislative Reforms to Ensure Institutional Support for the Digital and Intelligent Transformation of Higher Education

The transformation of higher education towards digitalization and intelligence necessitates legislative backing. Institutional frameworks must be formally recognized and protected to facilitate the dissemination and adoption of innovative experiences and outcomes. This legislative framework encompasses various levels of normative documents, including legal standards, departmental regulations, local statutes, organizational ordinances, and internal charters. Given the rapid advancements in digital and intelligent technologies, legislation often lags behind. Digital soft law, as a set of non-binding rules and guidelines, plays a crucial role in steering the operations of the digital society, underscoring the importance of proactive internal governance within universities. Higher education institutions need to anticipate changes, respond with scientific precision, and actively pursue transformation by enhancing top-level design and legislative reforms. This involves scrutinizing existing governance concepts, principles, rules, and systems, and advancing efforts in “abolishment, reform, and establishment” to ensure that the digital and intelligent transformation of education is firmly rooted in legal frameworks.

1. “Educational Approaches”: The advent of digital intelligence technology has significantly transformed educational approaches, redefining the role of teachers from “authoritative lecturers” to “precise service providers.” This transformation necessitates an accelerated reform of the personnel systems in higher education institutions, focusing on the dimensions of “why teach”, “how to teach”, and “what to teach”. This involves a proactive exploration of capability requirements, appointment qualifications, teaching evaluations, performance assessments, and reward and punishment mechanisms.

2. “University Operational Models”: The operational models of future universities are evolving towards greater digitalization, systematization, and sharing. According to the “2021 Horizon Report (Higher Education Edition)” by the American Higher Education Information Association, “degree modularization and decomposition” is a long-term trend in higher education, with micro-certifications identified as pivotal technologies and practices influencing future educational practices (Pelletier et al., 2021). Developing mechanisms for mutual recognition of achievements and promoting training model reforms are emerging pathways for the digital transformation of higher education.⁴ To foster ongoing inter-

⁴Four New Paths: 2024 Higher Education Digitalization Research Report Released [EB/OL]. (2024-04-28) [2024-10-19]. <https://www.landray.com.cn/activity/95900>

university collaboration and exchange, it is essential to establish widely recognized and applicable credit and degree certification policies and standards, streamline conversion and mutual recognition processes, and create a reliable, transparent digital information management system for mutual recognition of achievements. This system should ensure that digital learning processes are trackable and traceable, utilizing information technology to achieve “cloud certification” of credits, learning, and degrees through micro-certificates, electronic diplomas, and credit banks.

(3) Enhancing Technical Support to Advance the Digital and Intelligent Governance of Higher Education Institutions

In the transformation towards digital and intelligent higher education, data acts as the driving force while technology forms the core, necessitating the support of next-generation information technologies such as cloud-based virtual reality, sensing technology, and mobile communication. Higher education institutions should actively adopt digital and intelligent technologies to establish a stable, unified, and data-sharing information system. This system aims to achieve comprehensive digitalization, virtualization, visualization, and real-time monitoring of campus operations, alongside fostering collaborative and intelligent decision-making processes.

Firstly, it is essential to integrate diverse resources and deepen the collaboration between government, industry, academia, and research sectors to enhance digital collaboration mechanisms. International organizations, national governments, universities, and enterprises must collectively build the infrastructure necessary for the digital and intelligent transformation of education. They should create platforms that better reflect the unique characteristics of future educational and teaching environments. An example is the “National Higher Education Smart Platform”, which includes modules for courses, teaching materials, virtual simulation experiments, teacher research, creative course platforms, and extracurricular development, offering learners extensive learning resources at no cost. Furthermore, there is a need to advance the design and development of intelligent and diverse teaching and management tools. In the context of legal framework development, governance efficiency can be improved through the application of digital technologies such as intelligent management and blockchain. Additionally, the role of intelligent technologies in legal prediction, consultation, and document generation within legal services should be leveraged.

Secondly, there is a need to enhance digital intelligence governance by advancing the deep integration and innovation of information technology within education and teaching. This involves multiple layers, including infrastructure, public platforms, application systems, and teacher-student interactions (Ding, 2024). The goal is to achieve digitalization in various domains, such as smart campus development, digital school governance, digital teaching management, digital auxiliary teaching, and digital public learning tool platforms. This digital transformation aims to make university operations and the lives of teachers and

students more scientific, intelligent, convenient, and efficient (Xu & Zhang, 2022). It requires a coordinated approach across the stages of construction, learning, utilization, and management, with a focus on demand-driven and problem-oriented strategies, prioritizing practical application. The approach is not simply about transitioning social governance from offline to online but about establishing a governance mechanism that is convenient, efficient, precise, high-capacity, and automated.

(4) Strengthening Digital and Intelligent Legal Culture Education to Build Smart Campuses

With the profound impact of science and technology on social structures, as well as the significant effects on human moral life and the distribution of interests, there has been a deep integration and reconstruction among law, ethics, and technology (Zhao, 2022). The impact of digital and intelligent technology on future society has always been a focal point of attention and discussion in academia and practice. In the face of risks and challenges accompanying technological development, it becomes particularly important to look beyond phenomena to understand the essence, and to think and solve problems using legal thinking and methods. Strengthening digital and intelligent legal culture education is not only an inevitable requirement for implementing the fundamental task of “fostering virtue through education” in the digital and intelligent era, but also an intrinsic motivation for the digital transformation of higher education.

Firstly, it involves guiding teachers and students to learn and master basic legal knowledge, enabling them to independently apply intelligent technology and legal knowledge to timely identify and address risks in cyberspace. It is essential to establish a belief in the law, strengthen awareness of rules, and comply with laws, basic morals, and community agreements, thereby internalizing concepts of fairness, justice, and safety in law into their mindset and actions.

Second, the use of digital intelligence technology is innovating promotional education by creating a digital culture unique to the school through technologies such as digital profiling, algorithmic recommendations, virtual reality, and knowledge graphs. This approach mitigates the adverse effects of “circle culture” in online communication. The information push by intelligent algorithms contributes to an ideological “circle differentiation”, “circle polarization”, and “circle solidification” in the political cognition across the information supply side, demand side, and ecological chain (Zhang, 2021). Leading mainstream discourse to guide online communities requires mainstream media to proactively transform and innovate both dissemination methods and content. By leveraging digital technology, they can break through information cocoons and counteract the group polarization caused by homogeneous information. Establishing a discourse advantage facilitates positive guidance of circle culture, steering university students towards the correct legal spirit underpinned by the national perspective and values of socialism with Chinese characteristics (Kong & Guo, 2022).

Third, strengthening the awareness of “rights-based” principles and improving

the rights relief mechanism is essential. On one hand, digital intelligence technology is utilized to build a smart platform for integrated online handling of interest appeals, automating processes such as requests, feedback, completion, and suggestions, thereby enhancing the “speed” of legal services. On the other hand, broadening the channels for interest appeals through hotlines, president mailboxes, petition reporting, on-site consultations, and online responses helps promptly address queries and resolve conflicts. This approach ensures that the broader community of teachers and students experiences the “warmth” of humanistic care in campus governance.

5. Conclusion

Digital intelligence technology is accelerating the evolution of a new wave of technological revolution and industrial transformation, significantly influencing and reshaping human thought processes and societal operational models. The digital transformation of higher education represents a profound integration of science, technology, and education, promoting a synergistic advancement and mutual enhancement of both material and human dimensions. Intelligent technology continuously challenges the value of human “subjectivity”, and the ethical dilemmas arising from technological governance prompt reflections on the future: What kind of technology do we need? What kind of individuals does our era demand? Confronted with the risks and challenges posed by technology, the rule of law stands as the cornerstone of future society and is the indispensable choice for higher education to fulfill its fundamental mission of “cultivating virtue and fostering talent”, addressing the questions of our times and offering solutions to contemporary challenges. By seizing the opportunities presented by technological change, employing advanced technologies to create intelligent campuses, and integrating legal thinking and methodologies throughout the entirety of university governance, we can achieve the dual empowerment of “digital intelligence” and “rule of law”. Education serves as the cocoon, humans as the pupae, technology as the light, and the rule of law as the heat. Humanity becomes civilized through education, education evolves because of humanity, and human society will experience a new metamorphosis amidst the waves of an emerging technological revolution.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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