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ON POTENTIAL RISKS AND COUNTERMEASURES OF AI EMPOWERED HIGHER EDUCATION DIGITAL GOVERNANCE

Li Ruohan¹, Shi Manyu² and Liu Yuling^{3*}

^{1,2}School of Military and Political, National University of Defense Technology, China

^{3*}School of Law, Central South University, China

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ABSTRACT

Against the backdrop of AI technology empowering higher education, universities are gradually developing a new digital governance paradigm based on digital construction and centered around algorithmic power. At present, since the concept and institutional construction of digital governance in higher education are not yet mature, there are potential risks in higher education digital governance, such as value deviation, incapacity of governance subjects, disorder of power, and misuse or abuse of technology. Therefore, universities must promote the innovation of the digital governance paradigm in higher education from aspects such as balancing computational rationality and humanistic values, strengthening the awareness and capabilities of human subjects, remodeling the multi-co-governance structure, and integrating and optimizing the governance system, so as to drive the modernization of the digital governance system in higher education.

KEYWORDS: higher education, digital governance, AI Empowerment, potential risks

INTRODUCTION

In the digital era, digital technologies represented by artificial intelligence have been widely applied in the practice of higher education governance, exerting a profound influence on higher education reform. The introduction of artificial intelligence technology has significantly enhanced the precision and efficiency of higher education governance, and promoted the transparency and democratization of higher education governance. The popularization of online education platforms has broken the time-and-space limitations of traditional classrooms, enabling more students to access high-quality educational resources and promoting educational equity. Through big data analysis, universities can keep track of students' learning behaviors, academic performance changes, and mental health status in real-time, thus formulating more personalized educational strategies. Meanwhile, the application of artificial intelligence in administrative management, such as intelligent course scheduling and automated approval processes, has significantly reduced management costs and improved governance efficiency. Artificial-intelligence-assisted scientific research tools, such as literature retrieval and data analysis, have greatly improved research efficiency and promoted the progress of academic research. The application of blockchain technology has made the certification and

evaluation of academic achievements more open and transparent, reducing the occurrence of academic misconduct.

The impact of artificial intelligence on higher education is not only reflected in the application of technological tools but also touches on the in-depth reconstruction of educational concepts, management mechanisms, and talent cultivation models. In the traditional education model, teachers are often regarded as authorities, and knowledge transfer is one-way. However, artificial intelligence technology, through means such as personalized learning analysis and intelligent recommendation systems, makes education pay more attention to students' individual differences and learning needs. This transformation not only improves learning outcomes but also promotes the shift of educational concepts from standardization to personalization and from knowledge inculcation to ability cultivation. At the level of management mechanisms, the application of artificial intelligence technology is driving the transformation of higher education governance from experience-driven to data-driven. Traditional university management often relies on the experience and intuition of managers, and the decision-making process lacks scientificity and transparency. Artificial intelligence can provide more accurate decision-making support for university managers through big data analysis and machine-learning algorithms. This data-driven governance model not only improves the scientificity of decision-making but also enhances the transparency and fairness of management, promoting the modernization of university governance. In terms of talent cultivation models, the application of artificial intelligence technology is reconstructing the traditional education ecosystem. The traditional education model is often limited to classrooms and textbooks, and students' learning content and methods are relatively fixed. The introduction of artificial intelligence technology has enabled education to break through time-and-space limitations and become more open and flexible. This transformation of the talent cultivation model not only meets the needs of the digital-intelligence era for talents but also promotes the all-round development of students and the improvement of their lifelong learning abilities.

However, this in-depth reconstruction is also accompanied by a series of challenges. For example, under the student-centered educational concept, how to balance personalized education and educational equity and avoid technology exacerbating educational inequality; under the data-driven management mechanism, how to protect the privacy of students and teachers and ensure the legality and ethics of data use; in the transformation of the talent cultivation model, how to avoid the impact of technology on humanistic education and maintain the warmth and humanistic care of education. These issues need to be fully addressed in higher education reform. In reality, due to people's serious lack of awareness of the risks brought by digital governance technology empowerment, they have fallen into misunderstandings such as the deviation of digital governance values, the disorderly expansion of digital power, the prevalence of digital formalism, and the incapacity of governance subjects. These risks seriously threaten the value order of higher education digital governance and affect the practical effectiveness of higher education digital governance reform.

This study focuses on the key issue of the technological risks in higher education digital governance. By researching the essential connotation of higher education digital governance, analyzing the causes of digital governance risks, and exploring innovative reform paths to address these risks, it aims to provide theoretical guidance for the digital transformation and high-quality development of higher education.

II. THE ESSENTIAL CONNOTATION OF DIGITAL GOVERNANCE IN HIGHER EDUCATION

From the perspective of academic development history, the term digital governance originated from scholars' systematic interpretation of digital governance theory. They organically combined modern information technology with governance theory, forming a digital governance theoretical paradigm that is different from other governance theories such as new public management, network governance, and collaborative governance.

As a new type of higher education governance paradigm, digital governance relies on digital information technology and the digital power it generates, having a wide-reaching and profound impact on the power (interest) relationships, concepts and behaviors, and organizational management among various stakeholders in higher education [1]. It has become a key force influencing and driving the reform and development of higher education quality. Conceptually, digital governance in higher education refers to the practical process in which higher education uses digital information technology, the data information it collects, and the digital calculation rules set through research to deeply adjust the power-responsibility relationships and resource allocation among governance subjects. In this process, digital governance mainly uses digital algorithms and their rules to understand and grasp the complexity, diversity, and uncertainty of higher education, complete the digital construction of the subjective and objective worlds of higher education, determine the digital relationships between higher education governance subjects and their objects, realize the exchange between higher education governance subjects and element resources such as data information, and form a value order of higher education digital governance that is clear in goals, well-defined in rules, objectively stable, and agile and efficient.

2.1 DIGITAL CONSTRUCTION: THE PREMISE AND FOUNDATION OF DIGITAL GOVERNANCE IN HIGHER EDUCATION

Digitally constructing the subjective and objective educational world based on big-data information is an important foundation for digital governance in higher education. It follows the governance principles of no data, no governance and everything can be digitized. By using objective, digital, and standardized technical methods, higher education activities are quantified into a series of precisely measurable digital indicators. Corresponding management decisions are then made based on higher education data information, which in turn affects the operation of power and responsibility in higher education governance and the optimal allocation of elemental resources.

The main basis for digital governance in higher education comes from various data information generated in higher education activities [2]. The governance subjects of higher education complete the digital construction of the subjective and objective world of higher education, its operating order, and governance rules based on pre-established value standards and algorithm rules. This promotes the interactive operation between data information and governance subjects, facilitates the optimal allocation of power, responsibility, and elemental resources in higher education governance, and realizes the overall construction of the digital value order of higher education governance.

Taking student development as an example, universities complete the digital construction of students' learning processes and outcomes based on data information regarding student subjects, course learning, and extracurricular practices. This influences the optimization of the school's educational systems and resource allocation. In this way, through the digital construction of the value information of the main and object entities in higher education, digital depictions are made from individual teachers and students to university departments and institutes. The digital value relationships between the main and object entities of higher education are established. Based on this, the educational elements and resources of higher education are allocated, which affects the practical operation of the power and responsibility of higher education governance subjects and constructs the power space for digital governance in higher education.

2.2 ALGORITHMIC POWER: THE OPERATIONAL LOGIC OF DIGITAL GOVERNANCE IN HIGHER EDUCATION

Traditional governance in higher education heavily relies on the experiential judgments of administrative leaders and peer experts. This model is highly subjective, lacking objective foundations, and is susceptible to personal biases and cognitive limitations [3]. Resource allocation often depends on experience and conventions, making it difficult to accurately identify the actual needs of different departments, disciplines, or individuals, leading to uneven distribution or even waste of resources. Moreover, traditional governance models are inefficient in information collection, organization, and analysis, resulting in significant information asymmetry. Administrators struggle to comprehensively and promptly grasp the operational status of the higher education system, causing delays or errors in decision-making. Additionally, the lack of transparency in governance processes and effective oversight mechanisms can foster power abuse or corruption.

In contrast, data governance leverages big data and digital algorithms to minimize subjective interference, enhancing the objectivity and scientific rigor of decision-making. By precisely identifying the needs of different departments, disciplines, or individuals, data governance optimizes resource allocation, improves efficiency, and promotes educational equity and quality. Big data technology enables real-time collection, integration, and analysis of various data within the higher education system, providing administrators with comprehensive and timely information support, significantly boosting decision-making efficiency. Furthermore, data governance decisions are based on open data and algorithms, offering strong transparency and traceability, facilitating external oversight and evaluation, and enhancing the fairness and democratization of governance.

The operational logic of digital governance in higher education can be understood as a new governance model centered on data, driven by algorithms, and supported by technology. Its essence lies in systematically managing and optimizing the complexity, diversity, and uncertainty of the higher education system through digital means. The core element of this logic is the deep integration of data and algorithms, which involves comprehensive collection, cleaning, integration, and analysis of multidimensional data from the higher education system to form a scientific basis for governance decisions, shifting the governance process from experience-driven to data-driven. The operational mechanism constructs a closed loop from data collection to decision feedback, utilizing technological means to collect data in real time, extracting insights through algorithms to formulate governance strategies, and then monitoring and evaluating data to feedback governance outcomes, achieving a dynamic, real-time, and efficient governance model. The value goal of this logic is to establish a digital governance order, using data-driven decisions and algorithm-supported operations to clarify governance objectives, establish clear rules, ensure objectivity and stability, and achieve agile and efficient governance responses, thereby enhancing educational quality, promoting equity, and optimizing resource allocation.

2.3 DIGITAL GOOD GOVERNANCE: THE VALUE PURSUIT OF DIGITAL GOVERNANCE IN HIGHER EDUCATION

As China's higher education enters the new normal of digital governance, the digital relationship network constructed based on digital information and digital algorithms are becoming the fundamental logic for determining the interaction between the subject and object of higher education, contributing to the objective construction of the digital value order in higher education.

It is worth noting that although digital governance in higher education has accelerated the digitalization, networking, and intellectualization of higher education governance, promoted the data flow, open sharing in higher education, optimized the management processes and operational efficiency, and advanced the precision and objectivity of higher education governance, in the current digital governance system, the digital power of universities is actually a product of the mutual penetration and integration of traditional bureaucratic administrative power and digital technology. Integrating it with higher education performance management has led to the formation of a digital performance management system for higher education [4].

On the one hand, it has accelerated the rapid transformation of the administrative power in universities. Under the influence of digital technology, it has reshaped the manifestation and operation mode of the bureaucratic administrative power in universities, forming a digital-rational form of university administrative power. This effectively weakens the subjective arbitrariness of university administrative power, avoids the negative impacts of subjective factors such as personal relationships and power-interests in traditional governance on higher education governance, strengthens the objective rationality of university administrative power, and ensures the objectivity and fairness of higher education governance decisions in terms of procedure and form. On the other hand, it has intensified the power caprice and arrogant attitude of university digital power and its administrative subjects. It

overrides the professional judgment of the academic community in a form of super-scientific rationality, encroaching on the legitimate rights and interests of the higher education community and weakening the professional voice of the academic community.

In essence, digital governance in higher education not only needs to comprehensively empower through digital technology to optimize the institutional structure and process mechanism of higher education governance, improve the operation of rights and responsibilities in higher education digital governance, and enhance the practical effectiveness of higher education digital governance. It also needs to effectively regulate various risk issues in digital governance, such as digital discrimination, digital divide, and digital privacy security, promote the proper use of digital technology, standardize the practical operation of digital power, safeguard the legitimate rights of digital governance subjects, promote the fairness and justice of digital governance values, and achieve good governance under the rule of law in higher education digital governance.

III. POTENTIAL RISKS OF AI EMPOWERED HIGHER EDUCATION GOVERNANCE

The fundamental reason for the potential risks of AI empowering higher education management lies in the inherent tension between its technological logic and educational value. From a technical perspective, the design of AI algorithms is based on specific datasets and preset rules, which may embed implicit biases of developers or users, leading to decision outcomes deviating from educational equity principles and even exacerbating digital discrimination or digital divide. However, the transparency and interpretability of AI are insufficient, and its decision-making process is often seen as a black box that is difficult for educational subjects to understand and supervise [5]. From the perspective of educational philosophy, the standardization and efficiency orientation of AI may also erode the diversity and personalization of education, simplify complex educational processes into data indicators, and neglect the comprehensive development and innovation ability cultivation of students [6]. The potential risks of digital governance in higher education include: value deviation risk, subject incapacitation risk, power disorder risk, technology misuse and abuse risk, and digital formalism risk.

3.1 RISK OF VALUE DEVIATION: DIGITAL TECHNOLOGICAL RATIONALITY OVERRIDING VALUE RATIONALITY

As a new governance paradigm, digital governance is highly valued by university management departments for its many advantages, such as clear standards, high precision, rapid response, high efficiency and convenience, and objectivity and neutrality. It is widely applied in the practice of university performance management, which has led to the integration of digital technology and administrative power, and shaped a new form of digital governance power based on digital technology and with algorithm operation as its practical logic.

Due to people's serious lack of understanding of digital governance, excessive pursuit of the efficiency value of digital technology, and blind reliance on the quantitative indicators of digital governance, under the influence of managerialism and technocracy, governments and universities are increasingly pursuing the refinement, standardization, and quantification of digital governance technology and its

standard tools. They one-sidedly emphasize the absoluteness, authority, and objectivity of digital technology standards and evaluation rules, and place digital technology standards above the development of the subject. They only see the numbers but ignore the people, thus obliterating the complexity, relativity, subjectivity, openness, and innovation of higher education governance. This has caused a reversal of values in higher education digital governance, wrongly placing the instrumental value of digital technology above the human-centered subject value.

It continuously strengthens the discipline and control of digital technology over the ideas and behavior norms of governance subjects, ignores the subjective value of people in higher education governance, and causes the alienation of educational and academic activities in universities. Teachers have become academic coolies eager for quick success and instant benefits, and students have become sophisticated egoists, deviating from the human-centered value orientation of higher education digital governance and leading higher education governance astray into the wrong paths of performance-oriented, instrumental, utilitarian, and technological approaches.

3.2 RISK OF SUBJECTIVE DISEMPOWERMENT: LACK OF DIGITAL GOVERNANCE COMPETENCE AND RIGHTS

Due to reasons such as the lag in subject's cognition and ability development, the digital technology competence of higher education governance subjects falls far short of the practical requirements of digital governance and technological development. This leads to the problem of subjective disempowerment in higher education digital governance. Each governance subject is forced to abandon the subject status and legitimate rights that it should enjoy due to the lack of digital governance competence and literacy, gradually losing the right to speak in digital governance and hindering the practical implementation of the rights and responsibilities of higher education digital governance subjects.

Subjective disempowerment in higher education digital governance means that due to subjective and objective reasons such as the excessive development of digital information technology, the one-sided and backward subject cognition, and the slow and lagging ability development, the subject is forced to abandon relevant rights in digital governance and loses the adaptability to digital technology and digital governance, resulting in the inability to meet the development needs of digital technology and digital governance.

On the one hand, the serious deficiencies in technical cognition, moral ethics, and competence literacy of higher education governance subjects objectively have a significant impact on the practical application of higher education digital governance technology. This leads to immature cognition and non-standard practice in higher education digital governance. Blindly believing in the technical advantages of digital governance exacerbates the misuse and abuse of higher education digital governance, thus triggering the subjective disempowerment of higher education digital governance.

On the other hand, with the practical application of digital technology in higher education management, digital governance technology has been favored by higher education management departments for its

advantages such as simplicity, objectivity, comparability, high efficiency, and low cost. However, at the same time, it has also led to the gradual loss of the professional competence and power discourse of higher education governance subjects in higher education governance. The concept of technology first dominates the value orientation of higher education governance, forcing higher education governance subjects to abandon their subjective rights in digital governance. They become vassals of digital technology, being reverse-disciplined and manipulated by digital technology, which hinders the effective exertion of the rights and capabilities of higher education digital governance subjects and goes against the original purpose and basic principles of higher education digital governance.

3.3 RISK OF POWER DISORDER: DIGITAL POWER REINFORCES THE DISCIPLINARY CONTROL OF SUBJECTS

In fact, in the practice of digital governance, the integration of digital technology and administrative power has shaped a new form of digital power based on digital technology, which has become an important tool for higher education digital governance and exerts a significant influence on all fields and aspects of university organizational management and subject behavior. Different from other forms of power, digital power, as a new type of governance tool based on digital technology and digital algorithms, refers to a series of power-control behaviors exerted by higher education administrators on governance subjects such as universities, teachers, and students with the support of administrative power, academic power, etc., relying on digital management technologies such as digital management and quantitative performance assessment, thus influencing the organizational management of universities and the development of teachers and students.

In the digital evaluation of universities, the educational quality and development quality of universities are quantified into a series of digital symbol indicators such as the rankings of university disciplines and majors, graduation rates, and enrollment rates. Based on these indicator rules, the government and universities gradually place digital evaluation performance and evaluation standards above the public will of the higher education teaching community, completely replacing the professional judgment of the education community itself. Management decisions affecting the development of universities are made accordingly, which in turn affects the re-allocation of higher education resources. As a result, the digital evaluation power formed based on digital technology has become a hidden power that dominates higher education governance, surpassing administrative power and academic power, and reinforcing the disciplinary control of higher education subjects.

Relying on the monopoly of digital standard-rule formulation, the authority of digital governance technology, and the objective rationality of digital evaluation discourse, university administrators further strengthen the authority, monopoly, and control of university administrative power. For example, in the quantitative assessment management system, university administrative departments place external evaluation symbols such as the levels and impact factors of journal papers, the levels and amounts of teaching and research projects, and various honorary titles above the intrinsic value of teaching and research itself. This leads teachers to be busy creating various performance indicators and competing for honorary titles, and students to be obsessed with obtaining higher grade point

averages and awards. It further encourages the improper interference and control of academic rights by university administrative power, seriously weakening the basic rights of teachers and students for development.

3.4 RISK OF MISUSE AND ABUSE OF TECHNOLOGY: CAUSING DIGITAL DISCRIMINATION AND THREATENING INFORMATION SECURITY

If digital management technologies are overused in the quality evaluation of higher education, universities will simplify highly abstract and complex activities such as the development of teachers and students, as well as the development of disciplines and majors in institutions, into a series of quantifiable and comparable data evaluation indicators. They will also reduce the all-around development of people and complex teaching and research activities to standardized products. This has led to a series of serious consequences, including digital discrimination, information fraud, and privacy violations.

Digital discrimination often arises because in enrollment, evaluation, and resource allocation, there is an over-reliance on AI algorithms while neglecting their fairness and transparency. For instance, universities may train algorithms based on historical data, which may contain biases. As a result, the algorithms replicate and even magnify existing inequalities in decision-making. This abuse fails to leverage the potential of AI and instead reinforces structural discrimination in the education system, further marginalizing vulnerable groups.

Moreover, when AI technology is used to process and analyze data, without strict ethical norms and regulatory mechanisms, it may be used to generate false or misleading information. Universities may use AI technology to fabricate academic achievements or exaggerate performance data in pursuit of short-term interests or higher rankings. This abuse not only undermines academic integrity but also destroys the fairness of the education evaluation system and weakens the social credibility of higher education.

In addition, in higher education governance, if there is excessive collection and use of teachers' and students' personal information without effective privacy protection measures, sensitive data may be leaked or misused. Some universities may use AI technology to monitor students' learning behaviors and social activities, creating detailed personal profiles for management decisions. This abuse not only violates the privacy rights of educational subjects but may also lead to the data being used for non-educational purposes, further threatening their legitimate rights and interests.

3.5 RISK OF DIGITAL FORMALISM: INCREASING THE WORKLOAD OF DIGITAL GOVERNANCE

The widespread application of digital technologies in higher education has promoted the digitalization, informatization, and intelligentization of higher education governance, thereby enhancing the operational efficiency of higher education. However, at the same time, due to the immaturity of digital governance concepts, information technologies, and management practices, as well as the negative impacts of formalism and the obsession with documentation in the bureaucratic hierarchical system,

the technological discipline and control of digital governance by the hierarchical management system have been further strengthened. As a result, digital technologies in universities have become important tools for university administrators to strengthen supervision, management, discipline, and control. This has led to the one-sided abuse of digital technologies in school performance assessment and the educational and academic evaluation systems, causing a reversal of values and a disorder of relationships in higher education digital governance, and resulting in the prevalence of formalism in higher education digital governance. Consequently, the workload of grass-roots digital governance in higher education has been further increased.

In reality, the practical application of digital technologies has not replaced traditional administrative management processes. Instead, due to the fragmented, piecemeal, and overlapping digital governance platforms, school administrators, teachers, and students still need to spend more time and energy to adapt to the new changes in higher education digital governance. For example, with the full-scale advancement of smart campus construction, although the intelligentization, informatization, and digitalization of teaching and research management in universities have, to a certain extent, facilitated the digital management of schools and alleviated the burden and pressure on school administrative management, the fragmentation of the power system, the incompatibility of information system platforms, the repeated superposition of online and offline management processes, and the redundant and overlapping data information have further increased the pressure and burden on university teachers and students. Despite the construction of a large-scale data information management system by school management departments, due to the lack of coordination among departments, the non-sharing of data information, the incompatibility of information systems, the repeated collection of information data, and the repeated application and approval processes, not only has the workload of university teachers, students, and administrators not been reduced, but the complexity of university management has also been greatly increased, the service efficiency of school administrative management has been reduced, and the obsession with documentation and formalism in digital governance have been exacerbated.

IV. DEALING WITH THE RISKS OF AI EMPOWERED HIGHER EDUCATION GOVERNANCE

Although there are many risks associated with AI empowering higher education governance, these risks are controllable. Through scientific design and effective regulation, the potential of AI technology can be fully utilized to promote the modernization and high-quality development of higher education governance.

4.1 ACHIEVING A BALANCE BETWEEN TECHNOLOGICAL RATIONALITY AND HUMANISTIC VALUES

Although with the extensive application of digital technologies in the practice of higher education governance, the technical rational values of digital technologies, such as efficiency-first, precision, clear standards, and objectivity, are becoming increasingly prominent in higher education digital governance. However, higher education digital governance should not fall into the value dilemmas of technology-only, efficiency-only, and digit-only, being overly obsessed with the standardization,

precision, and control of digital technology indicators, governance goals, and evaluation criteria, while ignoring the complexity, diversity, generativity, openness, and synergy of higher education activities.

Digital technologies are meant to serve people and must be user-friendly. If the expansion of digital technologies cannot be restricted within a certain scope, it is likely to lead to the infringement of the rights and interests of university stakeholders and the development of the education cause. Therefore, higher education digital governance must strike a balance between technical rationality and humanistic values, adhere to the people-centered value concept, apply digital technologies to the practice of the life development of school teachers, students, and other subjects, meet the development needs of stakeholders in higher education for digital governance, stimulate and unleash the innovation vitality of governance subjects in higher education, and achieve the construction of a good digital governance ecosystem. To achieve the above-mentioned balance, universities should follow the following requirements when implementing AI-enabled education governance.

First, it is necessary to avoid one-sidedly using digits as the sole criterion for digital governance and increase the humanistic values in the digital governance process. Currently, due to the blind belief in the objectivity, precision, and measurability of digits in higher education governance, a higher education quality evaluation system based on digital indicators as the measurement and evaluation criteria has been formed in China. Therefore, it is necessary to guide the single-quantitative evaluation system to transform towards a multi-comprehensive direction. For example, enhance the comprehensive process-based assessment of teachers' ethics, teaching and educating students, and students' growth and development, rather than relying solely on digital symbolic indicators such as papers and titles. Instead of making life-or-death decisions based on cold digits, comprehensively consider qualitative textual narratives and quantitative digital indicators, and emphasize humanity in education, examine the relationship between people and digits, so as to curb the utilitarian, digital, and instrumental tendencies in higher education digital governance and break through the value dilemmas of technicism, performance-ism, and utilitarianism in digital governance.

Second, it is necessary to integrate instrumental rationality and value rationality to enhance the emotional value and human touch of digital governance. In reality, the instrumental rationality of higher education digital governance overrides value rationality, despising the free will and personal dignity of subjects, resulting in the inversion of the technical tools and value purposes of digital governance. In the process of integrating digital technologies into digital governance, value concepts such as educational spiritual culture, moral and emotional care, subject life awakening, and educational personal dignity should be integrated into the development of higher education subjects and organizational operations. Fully respect the free will and personal dignity of governance subjects, provide sufficient humanistic care to governance subjects, comprehensively safeguard the legitimate rights of governance subjects, and enhance the internal recognition of governance subjects towards digital governance, thus creating a beautiful situation of human-machine symbiosis and human-human symbiosis.

Third, it is necessary to break down the institutional barriers of higher education organizational power, break the original governance boundaries of higher education, and construct a multi-inclusive, open, and shared governance mechanism. The open development of higher education digital technologies will blur the boundaries between various subjects and organizations, break the original isolated island situation in higher education, eliminate the information barriers and data gaps in higher education, and accelerate the open cooperation among various governance subjects. All governance subjects in higher education should strengthen the awareness of open-minded cooperation and the concept of synergy, and promote full communication, mutual learning, and complementary integration among various subjects on the basis of information interconnection in a more grand, multi-open, and harmonious and integrated way, pool the governance forces of joint consultation, co-construction, and sharing, and realize the beautiful vision of the harmonious development of higher education digital governance.

4.2 STRENGTHENING THE AWARENESS AND CAPABILITIES OF HUMAN GOVERNANCE SUBJECTS

Due to the one-sided development and lag in technological cognition, digital ethics, and information literacy among the subjects of higher education digital governance in China, the country's higher education digital governance has fallen into dilemmas such as the disorderly expansion of digital power and the prevalence of digital formalism. These issues seriously affect the practical implementation of the rights and responsibilities of higher education digital governance and impede the practical effectiveness of the governance subjects.

From the perspective of the digital governance practice process, the higher the level of technologization and specialization of digital governance, the stronger the top-down control of the government over universities, and the weaker the bottom-up democratic participation. As a result, digital technology exerts pressure through organizational hierarchies, and the development fates of educational subjects such as teachers and students in schools are controlled by digital indicators. In the process of digital governance, the human who are the subjects of digital governance are buried under the ever-increasing pile of numbers and reduced to digital slaves. Digital governance cannot be all about data and no people. The serious lack of rights and governance capabilities of higher education digital subjects has led to the gradual loss of the right to speak in digital governance. Therefore, it is necessary to fully concern the rights of digital governance subjects and their practice of guarantee in digital governance, and enhance the sense of gain and satisfaction of higher education governance subjects in the implementation and guarantee of their rights through digital governance.

Higher education should enhance the correct understanding of digital governance among digital subjects and improve their professional qualities and intelligent capabilities in digital governance. On the one hand, it is necessary to clarify the necessity of digital governance and improve the cognitive level of digital subjects towards digital governance. Although digital governance has advantages such as objective rationality and precise quantification, it is also necessary to be aware of many ethical risks in digital governance, such as algorithmic bias, information gap, digital discrimination, and privacy security. It is necessary to strengthen the effective prevention of digital governance risks and ensure

the safety and ethics of digital governance. On the other hand, it is necessary to improve the technological application ability, digital information thinking, data security and privacy protection awareness of digital governance subjects. In particular, it is necessary to give full play to the key role of human in digital governance and strengthen the protection of the rights of digital governance subjects. Without the human subject, digital governance is just a meaningless digital symbol and a tool without value. Only by giving full play to the autonomy and initiative of digital subjects can digital governance have human-centered value and practical significance. It is necessary to stimulate the internal motivation of digital governance subjects, fully authorize them, and transform the digital symbols that were originally used as supervision tools into the internal needs for improving the professional abilities of the subjects themselves. While enhancing their own digital literacy, continuously strengthen the interaction and integration with digital technology, and comprehensively improve the professional wisdom and innovation ability of digital governance subjects.

4.3 REMODELING THE MULTI-CO-GOVERNANCE STRUCTURE OF HIGHER EDUCATION GOVERNANCE

Under the governance model of high-power government control, higher education governance is monopolized by administrative power. Facing the various educational policy goals and performance appraisal indicators set by the government, universities can only passively respond to the digital assessment indicators specified by the government. Moreover, the administrative managers within universities further apply the technical methods of digital assessment to all aspects of university management through the penetration of digital technology and digital power. As a result, the management traces of digital symbols pervade higher education governance, and the free space for teaching, academic research in universities is further squeezed in the form of digital power. Nowadays, the operation and development of universities revolve around the digital baton, and the over-dataization weakens the academic essence of universities. In reality, digital technology has not achieved the ideal effect of de-administration. Instead, with the support of the current hierarchical power, the power oppression of digital power on educational subjects is further magnified. Only by optimizing the power-responsibility structure of digital governance, promoting the multi-collaborative digital governance, and constructing a governance mechanism featuring multi-participation and collaborative cooperation can the power space of university digital governance be remodeled, the governance vitality of higher education governance subjects be further stimulated, and the technological effectiveness of higher education digital governance be released.

First of all, at the macro-level, it is necessary to deeply promote the transformation of the government's educational administrative functions, reduce the improper interference of government administrative power in higher education work, and reduce the rigid indicator requirements for the performance assessment of university running. Further implement and expand the autonomy of universities in running schools, enhance the autonomous space for university digital governance, and fully release the potential of universities for independent running and innovative development. At the meso-level, university managers should maintain a rational attitude towards digital technology and its governance,

correctly understand the value and effectiveness of digital technology in educational governance, avoid blind reliance on digital technology and assessment indicators, not only focus on numbers or only focus on indicators, and improve the rational cognition and professional practice of university managers in digital governance. At the same time, it is necessary to give full play to the meta-governance role of the government and university managers, aim at the actual needs of the development of university teachers and students, promote the optimal allocation of higher education institutional resources, and accelerate the construction of a comprehensive governance system jointly participated by multiple subjects. Eliminate the management-oriented malpractice of blindly relying on digital standards in digital governance, fully guarantee the legitimate rights and interests of relevant stakeholders such as university teachers and students, encourage multiple subjects to actively participate in the efficient practice of digital governance, release and stimulate the creative potential of university teachers and students in digital governance, and consolidate the right to speak in digital governance.

Secondly, it is necessary to rely on digital technology to reshape the space of the higher education governance field and promote the transformation of higher education from a hierarchical power structure dominated by a single center to a decentralized multi-collaborative governance structure. In reality, the rapid development of digital technology has made the governance boundaries of universities increasingly open and integrated, and all governance subjects are gradually moving towards a path of win-win cooperation. It plays an important role in accelerating the decentralization process of the university administrative system and promoting the flattening and collaboration of the university governance power-responsibility structure. Rely on digital technologies such as artificial intelligence, blockchain, and big data analysis to build a high-quality digital governance platform, and strive to create a multi-open, intelligent and collaborative digital governance system. Actively guide university managers, social people, etc. to actively participate in the digital governance practice of universities, promote the inter-connection, resource complementarity, and coordinated integration of multiple governance subjects in higher education. On this basis, promote the equal dialogue and collaborative cooperation of higher education digital governance subjects, liberate the digital governance subjects from the oppression and bondage of digital power, and realize the innovative reconstruction of the power space and value order of higher education digital governance.

Finally, it is necessary to further improve the legal and regulatory system for higher education digital governance and use legal means to promote the reconstruction of the power space of higher education digital governance. Further clarify the power-responsibility relationship of higher education digital governance subjects through legal systems, standardize the behavioral activities of higher education digital governance subjects, and clarify the scope of application and usage rights of digital technology. Restrain and standardize the proper exercise of digital power with a legal system featuring clear power-responsibility and strict structure. At the same time, strengthen the educational supervision of digital governance-related affairs, encourage grass-roots university staff and social forces to participate in rule-making and supervision, curb the monopoly phenomenon caused by university managers' use of power and rules, construct an equal, open, co-constructed and co-governed digital governance space,

and further promote the standardization, legalization, and institutionalization of higher education digital governance.

4.4 BUILDING A UNIFIED AND OPEN INFORMATIZATION SYSTEM FOR HIGHER EDUCATION GOVERNANCE

Digital technology serves as a crucial foundation for digital governance in universities. Relying on information technologies such as big-data analysis and artificial intelligence in higher education governance can significantly improve the workflow of digital governance in universities, reduce the redundant burden of digital governance, enhance the operational efficiency of digital governance, and fully stimulate the innovation vitality of digital governance. It is necessary to deeply promote the innovation and development of digital technologies in higher education, improve the efficient utilization of digital information technologies in higher education, and further consolidate the technological foundation for digital governance in higher education.

First of all, it is necessary to integrate and improve the platform system for digital governance in universities to enhance the multi-collaborative ability of digital governance. As the digital foundation of digital governance in universities, the digital platform must, while strengthening informatization and intelligent construction, increase resource investment in digital governance and continuously promote the innovative application of digital governance technologies. This enables more advanced information equipment and digital systems to maximally meet the interest demands of different higher education governance subjects, and constructs a higher-quality, more open and collaborative digital governance network. Meanwhile, the embedding of digital technology in higher education is a process of mutual construction between the organizational rigidity of digital technology itself and the structural flexibility of higher education governance. Therefore, in the process of embedding digital technology, it is necessary to integrate and promote each other with the original hierarchical management system of universities. It is necessary to give full play to the governance advantages of digital technology and avoid the constraints of traditional governance, so as to achieve information sharing, open cooperation, and efficiency aggregation among all governance subjects in higher education with the help of digital technology.

Secondly, it is necessary to strengthen the data management work in universities and promote the construction of digital security and ethics. Firstly, in the face of the tragedy of the commons problem caused by the fuzzy attribution of data ownership and management rights in digital governance practice, it is necessary to ensure the authenticity, accuracy, and safe use of higher education governance data, improve the management and supervision system for the operation of university data governance, promote university data governance work in a hierarchical manner, and improve the efficiency and reliability of the utilization of university data resources. Secondly, in the face of digital ethics issues such as information fraud, privacy infringement, and data security that emerge in the process of higher education digital governance practice, it is necessary to clarify the hierarchical scope, procedural processes, and institutional norms for data open-sharing among government departments, university administrators, and social organizations, improve the institutional norms for digital security

and ethics, do a good job in data information confidentiality and digital information security, and effectively protect the legitimate rights and interests such as the data information privacy of university teachers, students, administrators, and users.

Thirdly, it is necessary to focus on the innovative development of digital technologies to comprehensively empower digital governance work in universities. In this regard, government policies should comprehensively promote the continuous R & D and system update of digital technologies, actively guide social forces and resources to provide the latest technologies and financial support for digital governance work in universities, and encourage enterprises and the market to participate in in-depth school-enterprise cooperation. At the same time, universities themselves should seize the opportunities brought by the booming digital technologies such as artificial intelligence and VR, continuously improve the digital information system and governance platform of universities, combine digital technologies with scenarios such as higher education teaching and school management services, and focus on developing artificial intelligence large models that are suitable for higher education practice scenarios. By comprehensively empowering the digital governance system of universities with digital technologies, the practical efficiency of higher education digital governance can be further improved, and the modernization of the higher education digital governance system and governance capacity can be realized.

Finally, it is necessary to further improve the operating mechanism of digital governance rights and responsibilities, break down the information and institutional barriers in digital governance, and promote the optimization and integration of higher education systems and resources. It is necessary to give full play to the advantages of digital technologies such as commonality, mobility, and synergy, break down problems such as departmental barriers and poor operation of data information, integrate the original information silos into a unified, centralized, open, and collaborative data governance system, and further optimize and integrate fragmented and decentralized institutional resources. This promotes the connectivity and cooperation in aspects such as digital governance platform systems, business processes, and information resources, enables educational digital information and data resources to better achieve cross-departmental, cross-temporal, and cross-boundary interactive exchanges and open sharing, promotes the efficient utilization of higher education digital governance element resources, improves the practical efficiency of the operating system of higher education digital governance rights and responsibilities, and realizes the overall improvement of higher education digital governance capacity through open sharing and collaborative construction.

V. CONCLUSION

Digital governance mainly uses digital algorithms and their rules to understand and grasp the complexity, diversity, and uncertainty of higher education, complete the digital construction of the subjective and objective worlds of higher education, determine the digital relationships between higher education governance subjects and their objects, realize the exchange between higher education governance subjects and element resources such as data information, and form a value order of higher education digital governance that is clear in goals, well-defined in rules, objectively stable, and agile

and efficient. The operational logic of digital governance in higher education can be understood as a new governance model centered on data, driven by algorithms, and supported by technology. Its essence lies in systematically managing and optimizing the complexity, diversity, and uncertainty of the higher education system through digital means. The core element of this logic is the deep integration of data and algorithms, which involves comprehensive collection, cleaning, integration, and analysis of multidimensional data from the higher education system to form a scientific basis for governance decisions, shifting the governance process from experience-driven to data-driven.

The potential risks of digital governance in higher education include: value deviation risk, subject incapacitation risk, power disorder risk, technology misuse and abuse risk, and digital formalism risk. To effectively address the above risks, the following measures can be taken: By emphasizing the balance between technological rationality and humanistic values, it can be ensured that the application of AI not only serves to improve management efficiency but also respects the diversity and individual needs of educational subjects, thus preventing the erosion of the essence of education by technological alienation; By strengthening the capacity building of human governance subjects, they can maintain the dominant position in technology application, avoid the loss of control or abuse of technology, and enhance their judgment on technological ethics and risks; By constructing a multi-co-governance structure, it can promote the collaborative participation of multiple parties such as the government, universities, and society, form a check-and-balance mechanism, disperse technological power, and reduce the risk of technological dictatorship; By building a unified and open informatization system for higher education governance, it can solve the problems of data silos and information barriers, and promote the sharing and collaborative utilization of data resources. This not only improves governance efficiency but also enhances the transparency and fairness of governance, avoiding technological biases or decision-making errors caused by information asymmetry.

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