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Legal and ethical dilemmas and institutional responses to the application of generative artificial intelligence in education

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Abstract: The introduction of generative artificial intelligence (AI) into the education field, by introducing non-human actors, breaks down the binary subject structure of traditional educational legal relationships. This paper argues that the current education governance system, designed based on the teacher-student binary relationship, suffers from institutional mismatches in three aspects: attribution of responsibility, definition of rights, and recognition of academic norms. Through normative analysis and institutional comparison, and drawing on international governance experiences such as China's *Education Law*, *Copyright Law*, *Personal Information Protection Law*, and *Data Security Law*, this paper identifies three core dilemmas: First, AI-generated outputs lack the necessary justification dimension for "knowledge" in a legal and educational sense; second, the algorithmic process cannot

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meet the normative standards of legal reasoning; and third, the current tort liability framework struggles to trace damages back to attributable human subjects. To resolve these mismatches, this paper proposes defining generative AI legally as a regulated auxiliary entity, a functional intermediate category between a tool and a legal subject. This concept embodies three institutional principles: traceable responsibility, identifiable use, and labelable generation. This framework, without granting AI legal personhood, incorporates technological autonomy into a human-centered order of responsibility, providing a theoretically sound and operationally feasible institutional model for AI governance in the education sector.

Keywords: Generative Artificial Intelligence, Legal Relationships in Education, Human-machine Collaboration, Educational Ethics Governance, Regulatory Systems for Artificial Intelligence

1. Introduction

Generative AI is innovating rapidly in education. Its use in teaching assistance, learning assessment, and material production has become widespread across classrooms. For example, generative AI tools like large language models can generate teaching materials, help students with their homework through AI-based tutoring systems, and create personalized recommendations for learning. The generative AI is improving both the efficiency of education and the way educational resources are supplied[3]. The integration of technologies and their use in generative AI has created legal and moral consequences. The ownership of intellectual property arising from these systems is ambiguous; there exists a possibility of undermining academic integrity when students utilize AI to assist them in completing assignments[4]. Furthermore, there are still gaps within legal protections regarding the privacy of educational data and who the responsible party is for the algorithms that generate the data[5]. Educational governance systems have been designed using traditional teacher/student relationships and as a result are slow to adapt to new models where humans share knowledge collaboratively with machines. The paper poses the following research question: How can the legal system of China's education sector respond to the conflicting norms and ethical dilemmas created by generative AI? It offers several suggestions for the development of institutional innovation to enable coordination between technological advancement and educational standards, thus providing both theoretical and practical guidance for future education governance related to the standardized and sustainable implementation of generative AI in the field of education.

This paper intends to examine the legal and ethical dilemmas involved in using generative AI technology for educational purposes while presenting governance with strategies for responding as regulated, auxiliary subjects. Generative AI is different than typically used forms of educational media, it allows for collaboration between humans and machines and creates an environment where knowledge can be produced through collaboration rather than just in separate locations as was done traditionally through a teacher-student dichotomy. Thus, this paper suggests that governance in

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[3] BAIDOO-ANU, D., & ANSAH, L. O. "Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning", Journal of AI, V. 7, nº 1, 2023, p. 52-62. https://dx.doi.org/10.2139/ssrn.4337484

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education will not be achieved by enforcing limits but rather through putting regulations into place that allow educational institutions to clarify the appropriate uses of AI technologies and the boundaries of their respective roles and responsibilities with regard to AI technology in education.

In terms of research methodology, this paper employs a combination of normative analysis and institutional comparison. By reviewing current laws, regulations, and policy documents in China, including the *Education Law*, *Copyright Law*, *Personal Information Protection Law*, and *Data Security Law*, it analyzes the applicability and limitations of legal norms and educational ethics in AI applications. Furthermore, using typical cases from educational scenarios, it explores the conflicts of rights and obligations and the challenges of liability definition arising from generative AI in teaching practice. Starting from changes in the structure of educational legal relations, it identifies legal and ethical dilemmas and proposes targeted institutional design solutions to achieve coordinated development of educational technology innovation and regulatory governance.

2. Current status and legal and ethical risks of generative artificial intelligence in education

2.1. Current status of application in education

AI technology began in the mid-20th century. In recent years, breakthroughs in machine learning and deep learning have further enhanced AI's capabilities, enabling it to handle complex datasets and provide more accurate learning analysis and predictions[6]. In the field of education, since the emergence of ChatGPT (Chat Generative Pre-trained Transformer) at the end of 2022, the penetration rate of generative AI in educational scenarios at home and abroad has grown exponentially[7]. In 2025, the Expert Steering Committee for Teacher Development of the Ministry of Education of China released the *Guidelines for the Application of Generative Artificial Intelligence in Teachers (First Edition)*, which explicitly encourages the integration of generative AI into all elements and processes of education and teaching, provided it complies with educational principles, laws and regulations, and ethical norms. It is a growing area of educational innovation that generative AI is applying itself across a variety of educational inputs and outputs, such as intelligent tutoring system integration, generation and assistive learning tasks and personalized teaching content creation.

The intelligent tutoring system utilizes generative AI technology, primarily by analyzing students' learning progress and individualized needs to automatically generate corresponding tutoring content and strategies. Based on students' learning performance and level, the system automatically adjusts the tutoring content and difficulty, providing suitable tutoring tasks and exercises. Furthermore, it generates corresponding tutoring routes and strategies according to students' learning habits and needs, enabling students to learn more efficiently and purposefully[8]. In learning support, the system can provide real-time feedback and suggestions to help students correct mistakes and improve their learning methods. This AI-based real-time

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learning support gradually shifts the learning process from a teacher-centered, one-way knowledge transfer model to an interactive learning model involving multiple stakeholders.

In terms of learning task generation and assistance, generative AI is already able to quickly generate articles, reports, code, and various forms of learning materials based on prompts[9]. Students input questions or topics to obtain complete text drafts, problem-solving approaches, or structural analyses. The system then analyzes students' learning history data to build a corresponding knowledge base and algorithm model, assesses the completion of learning tasks and assignments, and provides corresponding scores and suggestions to help students improve their work. This technological capability also makes the process of generating learning outcomes exhibit characteristics of human-computer collaboration[10]. Assignments or papers submitted by students may contain varying degrees of AI-generated content, posing a new challenge to traditional academic evaluation standards that rely on students' independent completion.

In the production of teaching resources, generative AI provides teachers with tools for designing personalized teaching content. Teachers can use generative models to quickly generate teaching cases, classroom discussion questions, exercises, and diverse teaching materials, reducing the time cost of preparing teaching resources[11]. During lesson preparation, teachers use generative AI to generate initial drafts of course materials, case studies, or interactive classroom questions, which are then manually modified and optimized based on the teaching objectives. In higher education, some educational platforms also utilize generative AI to generate tiered practice questions or contextualized learning materials to meet the learning needs of students at different levels[12]. This has not only changed the way teaching content is produced, but has also, to some extent, promoted the transformation of the educational resource supply model from traditional manual production to human-machine collaborative production.

2.2. Legal and ethical risk analysis

Generative AI's implementation within education and teaching increases efficiency of education and supply of resources, however, there is a potential for the creation of structural legal and ethical risks. Educationally, the risks of generative AI are not just a result of the technology itself, but also are the result of changes to the degree of relationality between parties involved in producing educational outputs, the degree of attribution assigned to those parties, and the achievement of accountability between parties as a result of the generative AI's role in knowledge development. The legal system as currently constructed is largely based on the normative principle that humans generate results, without considering the full implications of generative AI on the process of humans and machines co-constructing knowledge in the course of education; this has resulted in four potential legal dilemmas as follows: intellectual property ownership, academic integrity maintenance, data security protection, and

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[9] WANG, N., WANG, X., & SU, Y. S. "Critical analysis of the technological affordances, challenges and future directions of Generative AI in education: a systematic review", Asia Pacific Journal of Education, V. 44, nº 1, 2024, p. 139-155. https://doi.org/10.1080/02188791.2024.2305156

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[12] BATISTA, J., MESQUITA, A., & CARNAZ, G. "Generative AI and higher education: Trends, challenges, and future directions from a systematic literature review", Information, V. 15, nº 11, 2024, p. 676-702. https://doi.org/10.3390/info15110676

the determination of infringement liability.

Generative AI's involvement in the creation of educational materials is fundamentally challenging the foundation of *Copyright Law* that "an author must be a natural person" via the issue of ownership of Intellectual Property. Regarding the ownership of intellectual property rights for AI-generated content, there is an ongoing debate in the international academic community between the "instrumental theory" (AI output belongs to the user) and the "originality standard"[13]. The AIID database (AI incident database) indicates that at the individual level, students, researchers, writers, and other professionals are frequently prey to infringement. For example, AI chatbots could directly plagiarize human author's works for the creation of their own works or artists' works could be used without authorization from the artist to train an AI model. Both of these scenarios presents a risk of infringement of intellectual property ownership rights[14]. Article 2 of the *Copyright Law* states that works created by Chinese citizens, legal entities, or unincorporated organizations are protected by copyright, which presupposes that a human must be the creator. In today's educational environments, it is becoming increasingly frequent for students to generate their coursework using AI, teachers to develop lesson plans using AI and educational organisations to create learning resources using AI[15]. Currently, it is uncertain who will have ownership over copyrighted material generated by AI. When generative AI was developed, there was no law governing the use of AI-generated content and how it can be used commercially or legally. The *Administrative Measures for Generative Artificial Intelligence Services (Draft for Public Comment)* published by the State Internet Information Office acknowledges that these topics do exist in relation to generative AI, but at this point in time there is still no consensus regarding how courts will handle adjudicating claims against generative AI in general. Additionally, institutions of higher education may have various challenges in developing their teaching materials using generative AI. For example, the data used to train the generative AI may not have been legally obtained and whether the output produced from the generative AI can be classified as a substantial reproduction of existing works[16]. Because relevant laws and regulations have not yet been systematically standardized, there is still considerable uncertainty regarding the copyright ownership and licensing of content generated in the education field.

In terms of academic standards, the implications of generative AI have shifted from individual infractions to structural barriers. Academic integrity is a key ethical component of education that relies on the concept of students completing all learning assignments alone. Generative AI has developed the ability to produce academic essays, class reports, and even entire research proposals based upon input from a user, permitting students direct access to the technological means through which they may develop and submit content as part of an assignment to complete these academic writing requirements[17]. This capacity for producing academic content

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erodes the foundation of "independent completion" of learning tasks as a means of evaluating student outcomes, and places educators in a position of difficulty in accurately evaluating students' learning outcomes and the true source of their achievements on assignments. Additionally, as access to generative AI resources is not uniformly afforded to all students, many students benefit from higher quality generated content from resources that they have access to and thus gain an undeserved advantage with respect to their academic assessments. For instance, Nature reported on a researcher who created a paper using ChatGPT without disclosing this information. After publication, the author was discovered to have used generative AI by using the "Regenerate Response" feature, and subsequently the item in question was retracted.[18]. This issue may not only threaten the integrity of educational assessments but also undermine the fundamental notion of educational equity within the larger context of education. As AI can act as an "unfair advantage" for some students who use AI to achieve better grades, such practices will pose significant hurdles to the fulfillment of Article 9 of the *Education Law*, which states that "All citizens, regardless of ethnicity, race, gender, occupation, property status, or religious belief, have the legal right to equal access to education". The challenges posed by generative AI are not insurmountable. The key lies in shifting academic integrity from "result detection" to "process disclosure." This shift requires precise alignment with the allocation of the burden of proof in legal mechanisms: when students fail to fulfill their obligation to disclose the use of AI, the reverse burden of proof rule should apply. This means the student bears the burden of proving that their submitted work primarily stemmed from their own intellectual labor, rather than the university proving the use of AI. This mechanism has already been initially implemented in the academic integrity norms of some universities. Its legal basis can be traced back to Article 64 of the Civil Procedure Law of the People's Republic of China regarding the general principle of burden of proof allocation, as well as the principle of presumed good faith in educational management. By linking the obligation of disclosure with the burden of proof, academic integrity norms are elevated from moral advocacy to legally operational procedural rules.

With respect to the ways in which generative AI operates in a learning context – on the one hand, tools process an enormous amount of educational data to create content; on the other hand, this data is stored and transmitted using various forms of educational technology[19]. From a legal viewpoint, the *Data Security Act* and *Personal Information Protection Act* are general laws offering specific criteria for managing data security and processing personal data. Therefore, in practice, issues regarding the definition of the purpose for educational data collection, implementation of the data minimization principle, and the lawfulness of cross-platform data sharing still exist for several educational scenarios. Article 31 of the Data Security Law sets forth security assessment requirements for the export of important data[20], but the definition of which data constitutes important data is still unclear, leading to blurred compliance boundaries in practice. Article 6 of the Personal Information Protection Law requires

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that the processing of personal information be "limited to the minimum scope required to achieve the purpose of processing"[21]. However, the training logic of large language models precisely pursues the maximization of data, that is, more data means better model performance, especially for highly sensitive data such as students' personal information and learning behaviors involved in educational scenarios[22]. Data may be continuously collected and analyzed during model training, system optimization, and platform operation, which could lead to the risk of data misuse and personal information leakage[23]. For example, Lee Luda, an AI chatbot from South Korean company ScatterLab, is facing a class-action lawsuit for illegally collecting users' chat logs and using their personal information without their consent[24]. From this perspective, the discussion on data protection needs to move beyond general descriptions of privacy risks to a precise analysis of the application of the purpose-limiting principle and the minimum necessity principle in the Personal Information Protection Law. Generative AI's model training logic pursues "data maximization," while the Personal Information Protection Law requires the minimum scope necessary for the processing purpose. This tension is particularly acute in educational settings, where students' learning behavior data is both the fuel for AI optimization and an object of strict legal protection.

When generative AI causes harm in educational applications, the current tort liability system faces the dilemma of difficulty in identifying the liable party. In the traditional tort liability system, the liable party can usually be clearly identified through the perpetrator of the act. However, the process of generative AI generating content often involves multiple parties, including model developers, platform operators, educational institutions, and specific users[25]. When generative AI generates incorrect information, infringes on others' copyrights, or leads to inappropriate learning evaluation results in educational settings, the current legal system has not established clear rules on which entity should bear legal responsibility[26]. Article 16 of the *Interim Measures for the Administration of Generative Artificial Intelligence Services* stipulates that relevant departments shall, in accordance with their respective responsibilities, strengthen the management of generative AI services. The relevant national authorities shall, based on the characteristics of generative AI technology and its application in relevant industries and fields, improve scientific regulatory methods adapted to innovative development

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and formulate corresponding classification and grading regulatory rules or guidelines. This only provides directional guidance to relevant departments and does not yet specify the rights and obligations of specific entities in the higher education field, including universities, students, and education authorities. Because legal reasoning is not merely logical deduction, but also a form of practical argumentation, it requires interpreters to reflectively weigh rules, principles, precedents, and specific contexts. The acceptability of legal argumentation depends on comprehensible statements of reasoning, serious consideration of opposing viewpoints, and justification based on public reason. Generative AI algorithms are essentially predictive modeling based on statistical correlations, rather than weighing normative reasons. AI cannot understand the intrinsic value of legal principles, nor can it make genuine normative choices among conflicting norms. When AI is used to assist legal education or academic writing, its output may superficially conform to formal logic, but when faced with value conflicts or ambiguous areas of rules, its reasoning fails to meet the requirements of sincerity and criticality in legal practice.

The underlying cause of this responsibility dilemma can be traced back to the classic distinction between "action" and "event" in the philosophy of action[27]. A teacher's teaching behavior or a student's plagiarism are both "actions": behind them lies the actor's intention, belief, and some degree of awareness of the consequences. Therefore, the consequences can be attributed to the actor based on the "theory of imputation." However, the process by which generative AI causes harm is closer to a "natural event" than an "intentional action." The complexity and uninterpretability of algorithmic decision-making sever the "intention-action-consequence" chain upon which we usually rely for moral and legal attribution. AI systems lack the intentionality required for "strong AI"[28], and their output is not a simple deduction of existing rules, but rather an emergent statistical result. This makes it difficult to apply the elements of liability centered on "fault" in traditional tort law: it is impossible to prove that AI has "fault", nor can the non-linear causal process inside the algorithm be simply equated with the "fault" of the developer or user.

2.3. An epistemological examination of generative artificial intelligence knowledge production

In traditional epistemology, "knowledge" is classically defined as "justified true belief" (Plato, Theaetetus). This triadic definition includes three necessary conditions: the proposition is true, the subject believes in the proposition, and the subject possesses sufficient justification. In the context of educational law, student assignments or papers are considered manifestations of "knowledge" precisely because educational evaluation systems presuppose that students can provide some degree of rational justification for their conclusions.

Generative AI outputs may be highly reliable in the dimension of "truth," especially on factual issues, but they suffer from fundamental deficiencies in the dimension of "justification." The process of AI generating content is based on probabilistic predictions from massive amounts of data, rather than on reflective acceptance of reasons. AI lacks a "state of belief"; it neither "believes" in its output nor assumes any cognitive responsibility for it. Therefore, even if the propositions output by AI are true, they lack the subjective justification dimension necessary to become "knowledge."

When students directly submit AI-generated content, the "student's knowledge"

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[27] DAVIDSON, D. "Essays on actions and events", 1980. https://doi.org/10.1093/0199246270.001.0001

[28] SEARLE, J. R. "Minds, brains, and programs", Behavioral and brain sciences, V. 3, nº 3, 1980, p. 417-424. Available at: https://web-archive.southampton.ac.uk/cogprints.org/7150/1/10.1.1.83.5248.pdf (accessed on 08 January 2026).

that the educational evaluation system attempts to assess is actually missing. Legally, equating AI output with "knowledge" undermines the fundamental goal of educational evaluation: assessing learners' understanding and justification abilities. Therefore, this article argues that within the framework of educational law, "AI output that has not been substantially justified by a human subject" should be explicitly defined as "candidate information" rather than "knowledge."

3. Changes in the structure of educational legal relations caused by generative artificial intelligence

3.1. Relationship structure analysis and changes

In terms of institutional perspectives, the presently-existing education legal framework of China implicitly operates under the assumption that there are human beings who may serve as subjects in its normative design; there are two main types of subjects involved in educational legal relationships, namely teachers and students. Educational activities may be defined as being comprised of educational institutions and state, school, and society educating learners through operational procedures of those entities. Teachers are responsible for providing knowledge via forms of transmission of knowledge, and organization of the learning and assessment of learner performance carries with it various types of social relational requirements to determine knowledge transfer; students will participate in educational activities as "educational task" participants and complete required or designated tasks per an identified learning relationship. These normative structures create an institutional framework that serves as an underlying presupposition about the teacher and student relationship regarding creating knowledge, teaching behaviors, and learning outcomes of students through educational activities as primarily defined by the interaction between the teacher and student. Within this structure, the allocation of rights and obligations in educational legal relationships also follows a logic centered on natural persons: teachers bear educational responsibilities and teaching obligations, while students bear learning obligations and are responsible for their learning outcomes.

The integration of generative AI is transforming the human-centered legal relationship structure in education. Unlike traditional tools, AI not only processes information but also participates in knowledge generation: generating text based on student questions[29], assisting teachers in lesson preparation[30], and even conducting initial assessments of student assignments[31].

A hybrid model of human input, algorithmically produced materials and the human filtering, modifying and integrating of the produced materials into the end result is how the creation of knowledge through collaborative effort between humans and machines often occurs when viewed as a process. The first step in this hybrid process is providing the AI system with a request for information. The AI then uses its algorithms to produce a response or an action that the human will need to filter, modify or integrate into the result they want to achieve from the machine. In this

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[30] CHEN, J., HUANG, Y., XU, J., & HE, D. "Constructing a New" Teacher-AI" Collaborative Teaching Paradigm in International Chinese Language Education Enabled by Generative AI", Journal of Computing and Electronic Information Management, V. 18, nº 1, 2025, p. 71-78. https://doi.org/10.54097/9cknfy07

[31] YADAV, A. B. "The development of AI with generative capabilities and its effect on education", International Journal of Science and Research (IJSR), V. 13, nº 5, 2024, p. 854-860. https://doi.org/10.21275/SR24509232318

process, the formation of knowledge outcomes is a comprehensive product of the interaction between humans and the technological system. This hybrid structure objectively alters the traditional knowledge production mechanism in educational activities and makes the formation of learning outcomes more complex.

This structural shift does not mean that generative AI should be directly regarded as an independent entity in educational legal relationships. Under the current legal system, the subjects of rights and obligations are still based on natural persons or legal entities[32]. Therefore, the role of generative AI in educational activities is more appropriately understood as a highly participatory technological system. Its participation in knowledge production needs to be regulated through institutional arrangements rather than simply granting it independent legal status.

From a jurisprudential perspective, the structural impact of generative AI on educational legal relations centers on its challenge to the fundamental concept of "legal subjectivity." In traditional legal theory, subjectivity is inextricably linked to "capacity for will," "rational choice," and "assumption of responsibility." Both the natural person theory[33] and the legal fiction theory[34] presuppose that the subject possesses attributable intent and freedom of action. The "generation" process of generative AI is essentially algorithmic computation based on probability distributions, lacking phenomenal consciousness or practical reason in a moral sense. Therefore, it cannot be legally constructed as the ultimate endpoint for attributing responsibility.

Actor-network theory[35] provides a more precise analytical framework: in a human-machine collaborative knowledge production network, generative AI plays the role of an "actant," exerting a substantial causal influence on the outcomes of educational practices by transforming rather than simply transporting information. In other words, although AI lacks legal subjectivity, it has become an active "non-human actor" in an ontological sense. This tension between the "absence of legal subjectivity" and the "presence of practical agency" is the deep-seated root cause of the "institutional mismatch" in current educational legal relations.

3.2. Manifestations and mechanisms of institutional mismatch

Institutional mismatch is a structural contradiction between the deeply ingrained anthropocentric view of modern law and a new form of practice comprised of a "human-non-human hybrid." The key to resolving this contradiction lies not in futile debates about granting AI legal personhood, but in drawing on the theory of indirect responsibility. This involves reconstructing the duty of care and supervisory responsibilities of human participants in the hybrid action chain, thus incorporating AI's agency into a normative framework with humans as the ultimate responsible party.

Current education laws and regulations are based on the traditional teacher-student dual model, and lag behind in three aspects: ownership of rights, determination of academic integrity, and definition of responsibility. First, copyright law requires that "the author must be a natural person," while AI-generated content is often mixed with human input, and current law lacks a mechanism for allocating ownership rights. Second, academic norms presuppose that students "complete" assignments "independently," but AI-generated content renders plagiarism detection

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[32] FILIPOVA, I. A. "Legal regulation of artificial intelligence: Experience of China", Journal of Digital Technologies and Law, V. 2, nº 1, 2024, p. 46-73. https://doi.org/10.21202/jdtl.2024.4

[33] VON SAVIGNY, F. C. "System des Heutigen Romischen Rechts", Periodicum Iuris, V. 1, 2023, p. 145. Available at: https://www.digitale-sammlungen.de/de/view/bsb10565865?page=,1 (accessed on 08 January 2026).

[34] KELSEN, H. "Pure theory of law", Univ of California Press, 1967. https://doi.org/10.1525/9780520312296

[35] LATOUT, B. "Reassembling the social: An introduction to actor-network-theory", Oxford university press, 2005. https://doi.org/10.1093/oso/9780199256044.001.0001

ineffective, weakening the integrity standard based on independent thinking. Third, the logic of attribution of responsibility assumes that roles are clearly identifiable and actions are traceable, but AI, as a "black box," severs the chain of responsibility from harm to the specific perpetrator[36]. These three factors together constitute a structural disconnect between institutional norms and practical operation.

The education legal system currently regulates only human subjects. The classification of teachers as professionals implicitly recognizes their independent judgment and professional duties. Likewise, the fact that students are classified as "the recipient of learning" presumes they are independent human subjects with their own will and volition. The purpose of the Education Law is explicitly stated to be the advancement of the educational process, and the legal framework established by the *Education Law* focuses exclusively on these two types of human subjects: teacher, and student. Liability within the education law system can conveniently be summarised as meaning: whoever performs the action enjoys the rights, and whoever bears the responsibility. This principle of liability works well when examining either type of human subject, since human behaviour is created with the ability to make independent choices to act, have an obligation to act and therefore an ability to be responsible for their action. The advent of generative AI technologies changes this underlying legal placement of subjectivity, because the algorithms and computational entities that comprise generative AI do not have the ability to act or create independent will, but they will be involved in the creation of knowledge and the distribution of knowledge in large and important ways. When non-human subjects generative AI are included in a relationship of legal subjectivity, they will provide significant challenges to applying the existing system of legal regulation, which regulates only human subjects.

Traditional teaching practices also define the current values of education. The basic values in a traditional educational environment are teaching and nurturing, mutual learning, and individualized instruction, all of which reflect how teachers and students interact with one another on a personal level. Teaching and nurturing others means influencing others through your own character and shaping their hearts; mutual learning reflects how both teacher and student can grow as a result of their interactions; individualized instruction assesses how well a teacher provides individualized support based on their understanding of their students. These ethical values come down to teachers using their emotional connections with their students, their value judgments, and their moral and ethical responsibilities as human beings. However, when teachers begin to use AI to assist them in providing knowledge, when they allow AI to answer student questions instead of providing answers to students, and when the way we evaluate student work no longer utilizes human judgment and relies instead on data, the experiential and cognitive foundations of these ethical values are destabilized. AI can provide information, but it cannot help people learn how to find truth; nor can it teach us how to value something. Law and ethics face a common dilemma: norms are presupposed by traditional models, while practice has moved towards human-machine collaboration.

From a normative perspective, the boundary between human cognition and algorithmic generation lies in the ability to occupy a "normative standpoint." Philosopher Random points out that the core of normative practice is "giving and asking for reasons." An entity can be included in a legal and ethical evaluation system because it can respond to the question "Why did you do this?" and provide understandable normative reasons for its behavior. The uniqueness of human cognition lies in the fact that learners not only receive information but also critically evaluate it, weigh conflicting reasons, and take responsibility for their cognitive

[36] ZHOU, T., & BIN ABD RAHMAN, M. R. "Legal Perspective on the Risk of Copyright Infringement by AI-Generated Contents in China", Malaysian Journal of Law & Society, V. 34, nº 2, 2024, p. 141-153. https://doi.org/10.17576/juum-2024-3402-10

commitments. The algorithmic process of generative AI cannot truly "occupy" a normative standpoint; it cannot justify its output, nor can it be reasonably held accountable for it. This distinction has direct educational legal implications: when evaluating student learning outcomes, it is essential to identify which parts reflect the student's own normative standpoint and which parts are merely mechanical reproductions of the algorithm's output.

The fundamental basis of institutional mismatch stems from the human-centric (anthropocentric) values of the legal texts and the traditional teacher-student framework of ethics within education where neither can deliberately include the non-human subject matter as an active participant through technology. Traditional legislation concerning education has a primary focus on the static assignment and evaluation of the results of educational activities based on the presumption that knowledge is developed in a sequential, subject-driven manner and therefore does not align with the collaborative activity that exists between humans and machines, which in turn, requires a shift in the overall legal framework from outcome-based to process-based monitoring and regulation of the knowledge created. This failure of the expected change process from a focus on result to focus on a process has resulted in the laws that currently exist being inadequate to accommodate the new hybrid behaviour of the parties after the AI intervention. It is the structural conflict that exists between the institutions' ability to properly respond to the need for innovation and the advancements of technology within the educational sector that exposes the education sector to the risk of unethical behaviour and vagueness in terms of accountability and responsibility.

4. Institutional response paths for generative artificial intelligence in education

4.1. Generative AI-assisted subject localization

The regulated auxiliary entity refers to a generative AI system recognized in educational legal relationships as a technological system that lacks independent legal subject status but possesses a procedural participation status in a normative sense. Its auxiliary nature is reflected in the fact that the output of AI is merely an intermediate product of teaching or learning activities; the final educational outcome must belong to a human entity capable of bearing legal and moral responsibility. Its regulated nature is reflected in the fact that AI developers, deployers, and users respectively bear legal obligations of care, transparency, and traceability, thereby embedding the operation of AI into a responsibility chain with humans as the ultimate end. AI should be categorized as an independent functional intermediary. Unlike pure tools, AI possesses algorithmic autonomy, and its output cannot be fully predicted or controlled. Compared to the intermediary nature of online platforms, AI actively generates new content rather than passively transmitting it, and therefore does not enjoy safe harbor exemptions. Furthermore, unlike service providers, AI's algorithmic decisions directly intervene in educational evaluation, thus requiring a higher duty of care. Its four core characteristics—lack of independent legal personality, procedural participation status, transparent liability, and dynamic compliance obligations—together constitute its legal boundaries. In developing a robust institutional response to generative AI in educational settings, the key task is to legally define generative AI's role in those relationships. From the viewpoint of comparative law, institutions from around the world and around the globe are working on how to implement technological systems into their institutional frameworks related to AI governance. As an example, the regulatory framework framed by the EU has demonstrated a risk-based regulatory approach towards AI governance, including some form of human oversight over the operation of the system. The European Union's *Artificial Intelligence Act* defines an AI system as a technological system that

must operate in accordance with specific regulations. Specifically, the Act categorizes some educational technology systems as high-risk AI systems and imposes a variety of regulatory requirements on those AI systems during their deployment and use. Some of these regulatory requirements include the need for transparency, explainability, and human oversight of these systems[37]. Its regulatory basis is the *EU Charter of Fundamental Rights*, which emphasizes that AI applications must not infringe upon human dignity, privacy, and the right to non-discrimination. The core characteristic of the EU model is that it views AI as a risk source requiring preventative regulation, with the focus of regulation on the design and deployment of the system itself, rather than on the allocation of responsibility during its use.

The US education governance system, from a data governance perspective, has defined the boundaries for the application of AI in education. The *Family Educational Rights and Privacy Act* (FERPA) exists to protect the privacy of students' education records by ensuring that students and their families control and have access to their educational information. As educational technology platforms and AI tools are applied in educational environments, US education management practices have increasingly emphasized that educational institutions should bear responsibility for data protection and usage management when using technology systems, ensuring that students' personal information is not improperly collected or misused[38]. At the federal level, the focus is primarily on executive orders and industry guidelines, emphasizing voluntary principles and transparency. State legislation is fragmented. The US model is characterized by viewing AI as a technological tool within the existing legal framework, relying mainly on ex post facto remedies such as contractual liability, product liability, and tort law, rather than ex pre-emptive systematic regulation. This light-touch approach prioritizes innovation incentives and market freedom. Although FERPA does not specifically regulate generative AI, its fundamental institutional principle—that educational data and educational decisions must be under a supervised institutional framework—offers important insights for the governance of AI in education.

Compared to mere pronouncements of principles, the EU's *Artificial Intelligence Act* embeds AI systems into a specific regulatory framework through risk grading and hierarchical obligations, while the US FERPA focuses on educational data protection, strengthening schools' primary responsibility in technology use by clarifying the data responsibilities of educational institutions. A common characteristic of both is that neither grants AI independent legal status, but rather achieves embedded regulation of technology by strengthening human responsibility. The EU's classification of educational AI as a high-risk system implies imposing almost quasi-subject-like independent compliance obligations on its operation. This borders on suggesting a functional personality, creating tension with the non-independent subject stance maintained in this paper. If the EU approach is fully adopted, auxiliary entities may need to be redefined as "heavily regulated technological systems," with developers bearing primary ex-ante obligations for autonomous risks, rather than users bearing ex-post responsibility. In contrast, under the fragmented accountability system in the US, the use of AI by educational institutions is primarily governed by contract and tort law, lacking a unified source of regulatory obligations. The regulated auxiliary entities proposed in this paper rely on explicit legal obligations, which may be difficult to implement in the absence of federal legislation. This means that the effective implementation of this framework presupposes the political will of legislators to

[37] LUCCHI, N. "ChatGPT: a case study on copyright challenges for generative artificial intelligence systems", European Journal of Risk Regulation, V. 15, nº 3, 2024, p. 602-624. https://doi.org/10.1017/err.2023.59

[38] QU, Y. "Personal Information Protection Dilemmas and Regulatory Adaptation in Generative Artificial Intelligence Applications", Journal of Social Development and History, V. 1, nº 4, 2025, p. 88-98. Available at: https://wonford.com/wp-content/uploads/2026/01/Manuscript-v1n4-10.pdf (accessed on 08 January 2026).

impose universal regulatory obligations on AI systems, a premise that may not hold true in some US jurisdictions.

This paper contends that China should not solely focus on a technology-centric approach to generative AI but rather utilize existing laws to assist in integrating generative AI into the institution-based regulatory framework for regulated ancillary entities through detailed responsibilities and increased procedures in order to strike an appropriate balance between the use of technologies and the legal systems for their governance. The term regulated auxiliary entity is used to reflect the importance of generative AI enabling student academics; there must be institutional arrangements for their governance via regulations regarding the use of generative AI, responsibility structures governing the use of generative AI, and rules governing how generative AI will operate. In terms of the function of generative AI in education, it primarily provides support in the areas of knowledge creation, supports the learning process, and analyzes assessment information; these uses can lead to efficiencies regarding how teachers teach, improve the quality of learning by students, but should not lead to teachers losing their role and responsibility to lead education, or students losing their responsibility for independent learning. Therefore, the teacher who organizes and leads the instructional process and the student who learns and assumes joint academic responsibility for the education will continue to be the key participants in the educational process. Generative AI should exist as a technological tool, with its participation and use subject to regulation and monitoring under an appropriate regulatory framework.

As an auxiliary regulated entity, generative AI's legal status means that the sources of its algorithms, data sets and decision-making processes need to be explainable and traceable so schools and educational authorities can monitor its use. Within the existing legal theoretical framework, it can be theorized as a functional legal construct with procedural compliance as the core governance logic and human end-of-life responsibility as the bottom line of norms. This means that students have the right to use AI to assist learning in compliance with regulations, but have the obligation to disclose their usage and bear full responsibility for the final results; teachers have the right to use AI to generate teaching materials, but have the obligation to review the accuracy of the content and clarify the boundaries of compliance; educational institutions have the right to deploy AI tools, but have the obligation to establish a registration and review system and bear institutional responsibility for system deployment defects; AI service providers have the obligation to ensure the interpretability and traceability of algorithms and bear product responsibility for algorithm design defects or illegal data sources. Developers of AI will have a higher duty of care to ensure that algorithms do not deviate from the goals of education and that using technology rationally does not erode the values of education. By positioning AI as a regulated tool, it establishes that the teacher's role as the guide for students' instructional activities and the students' responsibility for developing independent thought cannot be replaced by technology; and AI supports the development of knowledge within specified authorities. By establishing this principal status, the law can reconstruct the chain of responsibility in a human-machine collaborative model: when AI errs, the developer's responsibility or the user's management responsibility can be traced based on the regulatory requirements of its auxiliary entity, resolving the issue of the blurred lines of responsibility. By legally enshrining technology within the regulatory purview, in the event of infringement, the fault liability among developers, deployers, and users can be reasonably allocated according to the attributes of its auxiliary entity, and an algorithm registration and evaluation mechanism can be established to ensure that educational models conform to socialist core values and educational principles[39]. This means that AI service

[39] XIANG, A. "Fairness & privacy in an age of generative AI", Science and Technology Law Review, V. 25, nº 2, 2024, p. 288-312. https://doi.org/10.52214/stlr.v25i2.12765

providers must assume the obligation to conduct algorithm security assessments, educational institutions must fulfill the obligation to review the use of AI, and teachers and students must assume the obligation to use AI reasonably. This forms a human-machine feedback loop supervision mechanism to ensure that educational legal relations can maintain a stable structure centered on people even with the intervention of technology, and promote the transformation of education governance from passive response to proactive shaping.

4.2. Identifiable, traceable, and traceable legal system governance path

Generative AI usage in education will require engagement in the actual generation of knowledge at high levels, use complex technical processes, and exist under varying liability structures. Therefore, establishing effective governance for generative AI in the field through traditional educational law and regulation alone is not adequate to provide coverage. This article argues for an establishment of a governance path within the current legal framework as a "regulated auxiliary entity" to provide traceable responsibility, identifiable usage, and labelable generation. A new governance model will provide a complete institutional framework across all aspects of how AI participates in education, which will help impose institutional limits on the potential risk associated with the application of generative AI technologies.

In terms of accountability, to address the ambiguity of responsibility allocation in the human-machine collaboration model, the existing legal liability allocation mechanism should be appropriately optimized to construct a multi-level accountability mechanism. Article 29 of the *Education Law* stipulates that schools and other educational institutions have the right to "organize and implement educational and teaching activities," and this right also implies the obligation to ensure the safe and orderly conduct of educational activities[40]. Universities and other educational institutions should assume corresponding management obligations when introducing AI teaching tools, including establishing AI usage standards, formulating academic integrity guidelines, and setting up technology use review mechanisms. In the knowledge creation stage, based on the fundamental principles of *Copyright Law* regarding the creation of works and the ownership of rights, the focus of responsibility should remain on the human subject, that is, teachers or students should bear legal responsibility for the learning or teaching outcomes they ultimately submit[41]. Meanwhile, AI service providers should also bear corresponding technical responsibilities in terms of algorithm design, data sourcing, and system operation. If the system has obvious algorithmic defects or illegal data sources, they should bear corresponding responsibilities in accordance with relevant laws. It is recommended that the Ministry of Education, when revising the implementing regulations of the *Education Law* or issuing specific normative documents, clearly define the above obligations as statutory duties and set corresponding administrative responsibilities. By constructing a responsibility structure composed of user responsibility, institutional management responsibility, and technology provider responsibility, the system can achieve traceability of responsibility throughout the entire process of AI's participation in educational activities.

Laws relating to *Personal Data Protection* and *Data Security* include provisions related to legal, legitimate, and transparent principles for processing information. In order to improve visibility into how AI can be applied to the delivery of education, a

[40] RUHAL, M., BASIT, A., LINXIN, Q., FEROZ, M., XINRONG, P., ZAHEER, S., & ULLAH, W. "From Tradition to Modernity: China' s Education System "A Product of Legal Design"", Journal of Global Research in Education and Social Science, V. 19, nº 1, 2025, p. 62-80. https://doi.org/10.56557/jogress/2025/v19i19143

[41] LI, J., CAI, X., & CHENG, L. "Legal regulation of generative AI: a multidimensional construction", International Journal of Legal Discourse, V. 8, nº 2, 2023, p. 365-388. https://doi.org/10.1515/ijld-2023-2017

mechanism should be put in place, which allows access to this information through a transparent structure[42]. The application of this principle must also be applied to educational AI applications[43]. It is recommended that a specific clause be added to the *Degree Regulations* and the *Regulations on the Management of Students in Regular Institutions of Higher Learning* requiring students to attach a declaration of AI use when submitting coursework, dissertations, and other academic achievements. The declaration should include: whether generative AI tools were used, the specific scenarios and extent of their use, and the student's commitment to the authenticity of the final product. Universities should also establish an AI use registration or filing mechanism to uniformly manage AI tools embedded in teaching platforms or learning systems, thereby ensuring that the use of technology is under supervision[44]. By establishing such an identifiable mechanism, the process of AI's participation in educational activities can be made more transparent without prohibiting its use, thereby reducing the governance risks associated with the covert use of technology.

Generative annotation capabilities are a technological guarantee for assisting in the localization of content. It is necessary to use technical means to make AI-generated content identifiable, and from an institutional design perspective, transform technical annotation into a governance resource. Generative AI systems already possess a certain degree of content tagging or watermarking capabilities, providing an important foundation for institutionalized governance. Article 12 of the *Interim Measures for the Administration of Generative Artificial Intelligence Services* stipulates in principle that "Providers shall label generated content such as images and videos in accordance with the *Regulations on the Administration of Deep Synthesis of Internet Information Services*." In educational scenarios, this labeling requirement should be even more stringent. Technically, AI system providers should be encouraged or required to set necessary technical identifiers for their generated content, recording generation process information through digital watermarks or metadata tagging to provide a technical basis for subsequent identification[45]. Using the legal educational management framework, the institution may implement appropriate labelling policies for the creation and use of AI-based teaching materials or learning outcomes as part of their instructional process or for AI-derived information (e.g. AI-created academic papers or AI-assisted research papers). Each of these examples would need to have a label indicating that some, or all, of the content has been created and assisted by AI and must also be fully explained in a consistent manner in order to identify the difference between AI-generated content and human-created content. In doing so, institutions should begin to develop a complete governance chain that includes both the technical labelling and the institutional labelling, as a result of combining both forms of labelling.

The legal system governance approach proposed in this paper transforms ambiguous ethical controversies into operable legal accountability procedures. Its advantages lie in reducing the difficulty of fact-finding through pre-emptive procedural obligations, avoiding the all-or-nothing dilemma of attribution through tiered responsibility allocation, and upholding the basic logic of copyright law by

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[43] FRANKS, E., LEE, B., & XU, H. "Report: China's new ai regulations", Global Privacy Law Review, V. 5, nº 1, 2024, p. 43-49. https://doi.org/10.54648/gplr2024007

[44] JIANG, L. "Research on Copyright Infringement Issues of Generative Artificial Intelligence", Law and Humanities, V. 1, nº 1, 2025, p. 51-60. Available at: https://doi.org/10.63313/LH.9007

[45] JAYARAM, Y., SUNDAR, D., & BHAT, J. "Generative AI Governance & Secure Content Automation in Higher Education", International Journal of Artificial Intelligence, Data Science, and Machine Learning, V. 5, nº 4, 2024, p. 163-174. https://doi.org/10.63282/3050-9262.IJAIDSML-V5I4P116

distinguishing between AI-generated original information and human-proven results. Taking the previously mentioned *Nature* retraction incident as an example, researchers used ChatGPT to generate a paper but failed to disclose it, which was later discovered and the paper was retracted. In this case, ChatGPT, as a generative AI, was positioned as a regulated auxiliary entity without legal subject status, but its output had a procedural participation status. This means that researchers cannot shirk their responsibility by citing the actions of AI, but at the same time, AI service providers also have obligations of transparency and traceability; the researchers' failure to disclose the use of AI violated the disclosure obligations under this framework. If relevant regulations existed at the time, the academic journal could have directly determined academic misconduct based on this procedural violation, without needing to agonize over the factual problem of whether AI-generated content constituted plagiarism. In this case, the researchers bear full responsibility for the final submitted paper. Their failure to conduct substantive review of the AI output and to fulfill disclosure obligations constitutes intent or negligence. Furthermore, if the AI system lacks embedded technical identifiers, preventing the journal from automatically detecting errors, the service provider should bear corresponding technical compliance responsibility. This case also reveals an important practical premise: the effective operation of the framework depends on educational institutions promptly developing internal rules, AI service providers fulfilling their labeling obligations, and users having a clear understanding of compliance boundaries.

5. Conclusion

This article analyzes the core issue of how China's education legal system should respond to the legal norm conflicts and ethical governance dilemmas arising from the deep integration of generative AI into educational contexts. Research indicates that the intervention of generative AI is altering the traditional binary human subject structure of educational legal relations, centered on teachers and students, and is transforming into a new triadic collaborative relationship involving teachers, AI, and students. In this transformation, AI is embedded in the entire educational process as a knowledge producer, learning facilitator, and evaluation participant, resulting in a hybrid characteristic of knowledge generation involving human input, algorithmic generation, and human choice. This change not only alters the operation of educational activities but also impacts the subject structure, responsibility allocation, and academic norms of traditional legal systems. This leads to a certain degree of institutional mismatch in areas such as responsibility definition, rights attribution, and academic integrity assessment. In short, generative AI is not merely bringing about technological changes but also posing new challenges to the structural foundation of educational legal relations at a deeper level.

This paper makes theoretical contributions on three levels: First, it proposes and systematically demonstrates the concept of regulated auxiliary entities, positioning it as a functional intermediate category between instrumentalism and agency theory, providing an operational theoretical tool for the legal positioning of AI in educational activities. Second, it proposes institutional governance principles of traceable responsibility, identifiable use, and labelable generation, providing a foundation for the refined reform of academic evaluation systems. Third, by comparing the EU risk prevention model and the US market decentralization model, it reveals the adaptive impact of different regulatory paths on the "auxiliary entity" framework and clarifies the positioning logic of this framework under the premise of Chinese legislation. In the context of generative AI being deeply embedded in educational practice, the core task of legal governance is not to grant AI subject status, but to incorporate technological autonomy into a normative order with humans as the ultimate responsibility anchor by reconstructing the regulatory obligations of human participants. This proposition provides a new analytical starting point for future research on legal and educational

governance in the era of AI.

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