

Article

Changes and challenges of legal education in the era of generative artificial intelligence: Chinese experience

Wenyu Wang^{1,*}, Zhilang Xu², Zichun Xu³¹ School of Law, Southwest University, Chongqing 400715, China² School of Civil and Commercial Law, Southwest University of Political Science and Law, Chongqing 401120, China³ School of Law and Intellectual Property, Sichuan University of Science and Engineering, Sichuan 643000, China* **Corresponding author:** Wenyu Wang, wangwenyu199201@163.com

CITATION

Wang W, Xu Z, Xu Z. (2024). Changes and challenges of legal education in the era of generative artificial intelligence: Chinese experience. *Journal of Infrastructure, Policy and Development*. 8(8): 5600. <https://doi.org/10.24294/jipd.v8i8.5600>

ARTICLE INFO

Received: 2 April 2024

Accepted: 20 May 2024

Available online: 14 August 2024

COPYRIGHT



Copyright © 2024 by author(s).

Journal of Infrastructure, Policy and Development is published by EnPress Publisher, LLC. This work is licensed under the Creative Commons Attribution (CC BY) license. <https://creativecommons.org/licenses/by/4.0/>

Abstract: Using generative artificial intelligence systems in the classroom for law case analysis teaching can enhance the efficiency and accuracy of knowledge delivery. They can create interactive learning environments that are appropriate, immersive, integrated, and evocative, guiding students to conduct case analysis from interdisciplinary and cross-cultural perspectives. This teaching method not only increases students' interest and participation in learning but also helps cultivate their interdisciplinary thinking and global vision. However, the application of generative artificial intelligence systems in legal education also faces some challenges and issues. If students excessively rely on these systems, their ability to think independently, make judgments, and innovate may be weakened, leading to over-trust in machines and reinforcement of value biases. To address these challenges and issues, legal education should focus more on cultivating students' questioning skills, self-analysis abilities, critical thinking, basic legal literacy, digital skills, and humanistic spirit. This will enable students to respond to the challenges brought by generative artificial intelligence and ensure their comprehensive development in the new era.

Keywords: generative artificial intelligence; legal education; teaching practice

1. Introduction

In the field of legal education, the application of generative artificial intelligence systems poses new challenges to traditional educational methods, concepts, and ecosystems. These systems revolutionized the original modes of artificial intelligence technology, which were limited to indexed knowledge retrieval and repetitive material paraphrasing, through interactive question-and-answer knowledge responses and creative material combinations (Zhang, 2023). This advancement not only further diminishes the role and value of objective knowledge delivery in legal education but also signals a shift towards the core areas of legal education that were previously inaccessible to analytical artificial intelligence, such as the shaping of legal thinking and subjective value judgments. Facing the transformative opportunities presented by generative artificial intelligence, it is necessary to actively introduce these systems into legal education and summarize relevant risks and response strategies through teaching practices. This will lay the foundation for comprehensively improving the quality of legal education and successfully cultivating legal talents who are adapted to the demands of the digital technology era.

Currently, there are relatively few articles in China focusing on the impact of generative artificial intelligence applications on legal education, while there is a

relatively abundant amount of research on the impact of analytical artificial intelligence on legal education and the overall impact of generative artificial intelligence applications on education disciplines (Liu, 2020; Luo and Gao, 2020; Liu, 2022; Xiao and Sun, 2023; Zhang and Pan, 2021). However, most of these studies are still theoretical discussions without actually applying generative artificial intelligence to classroom teaching practices, resulting in a disconnect between these studies and teaching practices (Chen et al., 2023; Feng, 2023; Hua, 2021; Li, 2023; Wang, 2023; Zhou and Li, 2023). Therefore, based on existing research, this article aims to analyze the transformative opportunities and potential challenges faced by legal education in the era of generative artificial intelligence, with a focus on case analysis teaching practices using generative artificial intelligence. It also proposes some feasible suggestions for future legal education.

2. Case selection and course design

Case teaching is crucial in legal education. Through the study and analysis of typical cases, students can not only improve their skills in legal analysis and argumentation, their ability to categorize and integrate facts, their mastery and application of legal rules and principles, and their understanding of theoretical knowledge involved in legal disputes but also cultivate their deep-level thinking ability to “think like a lawyer” (Katherine, 2013). In the era of analytical artificial intelligence, we have been able to address tasks in traditional legal education that involve a certain degree of certainty and repetition, such as legal provision retrieval, similar case searches, and doctrinal collation. Therefore, classrooms that simply impart objective knowledge are no longer able to reflect the unique and transformative impact that generative artificial intelligence may have on legal education. However, in case analysis classrooms, the emergent capabilities of generative artificial intelligence in knowledge generation, interactive communication, value judgment, and contextual understanding can be better demonstrated. Therefore, this study explores the use of generative artificial intelligence in case teaching, aiming to deeply understand the beneficial changes and practical challenges that generative artificial intelligence may bring to legal education, and based on this, to propose appropriate suggestions for future reform directions.

Therefore, we have selected ten cases, including the cave case, that are highly typical, controversial, and influential both domestically and internationally, reflecting different judicial cultures and ideologies of various legal systems. These cases were chosen through a combination of recommendations from a generative artificial intelligence system and teacher screenings, and we have embarked on classroom teaching reform and experimentation using them, as shown in **Table 1**.

The course format is as follows: The teacher will first divide 24 students into four groups, and the groups will analyze the selected cases through internal and inter-group discussions. Before class, the teacher will require each group to negotiate and select different perspectives to analyze and evaluate the controversial issues in the cases. During class, each group will present their analysis of the relevant cases. After the presentations, the teacher will briefly lecture on the fundamental concepts

and knowledge systems related to the issues. Then, a classroom discussion will be held, where students from each group will elaborate, ask questions, and provide answers based on different viewpoints. Finally, the teacher will provide feedback on the discussion and address any questions raised by the students, as shown in **Figure 1**.

Table 1. List of typical cases in China and Abroad.

Time	China	Time	Abroad		
2001	Sichuan Luzhou Inheritance Case	Details can be found: https://www.pkulaw.com/CLI.C.408436353	Ancient Greece (Myth) Antigone	Details can be found: Sophocles, (2003) Antigone, trans. by Reginald Gibbons and Charles Segal, Oxford: Oxford, University Press.	
2014	Henan College Student was Sentenced for Digging Bird’s Nest	Details can be found: https://www.pkulaw.com/CLI.C.8282698	1882 Riggs v. Palmer	Details can be found: Riggs v. Palmer, 115 N. Y. 506, 22 N. E. 188 (1889)	
2016	Zhao Chunhua was Sentenced for Setting Up A Shooting Booth	Details can be found: https://www.pkulaw.com/CLI.C.87008902	1949 (Fictitious by LonL.Fuller)	The Case of the Speluncean Explorers	Details can be found: Peter Suber, (1998), The Case of the Speluncean Explorers: Nine New Opinions, New York: Routledge
2018	Case of Kunshan Liu Hailong Was Killed	Details can be found: https://www.pkulaw.com/CLI.C.67337485	1964	New York Times v. Sullivan	Details can be found: New York Times v. Sullivan, 33 U.S. 254 (1964).
2021	Guo Bing v. Hangzhou Safari Park’s Face Recognition Case	Details can be found: https://www.pkulaw.com/CLI.C.119312307	1967 (Fictitious by Philippa Foot)	Trolley Problem	Details can be found: Philippa Foot (1975) Abortion and the Doctrine of Double Effect, New York: Harper and Row

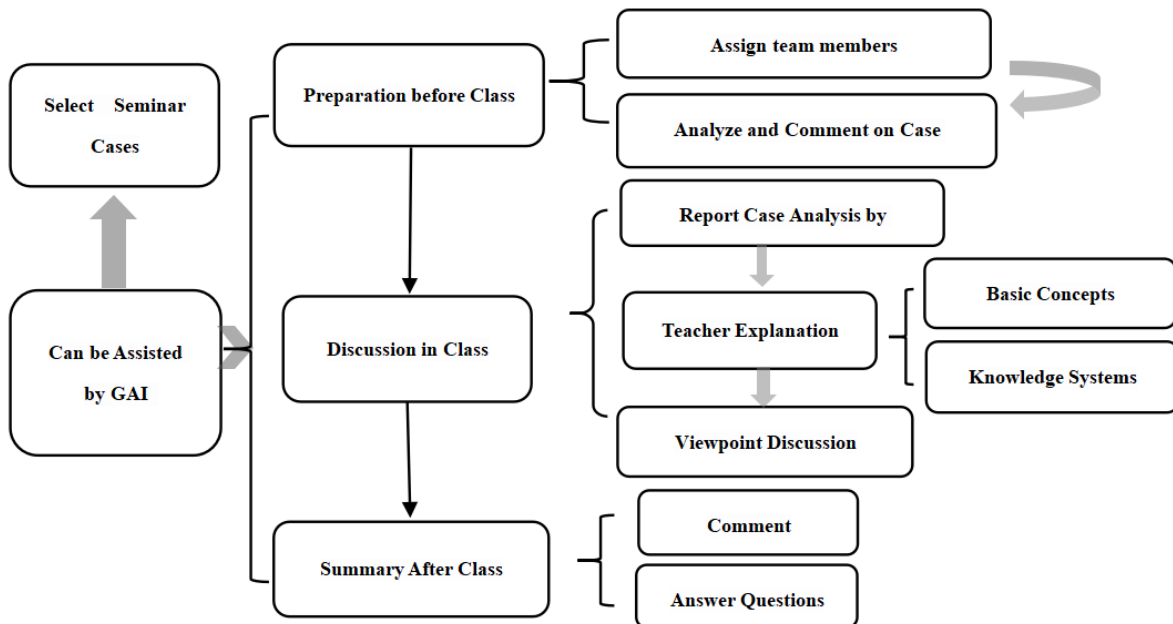


Figure 1. Flowchart of classroom teaching.

The most significant difference between this case-based teaching and previous ones lies in that during the group’s case reporting, evaluation, and debate, students are allowed and encouraged to use ChatGPT and “Wenxin Yiyan” (a Chinese artificial intelligence language model) systems as assistants and even directly use the answers to questions obtained through appropriate methods during their

presentations and discussions (Both ChatGPT and Wenxin Yiyao leverage the advancements of artificial intelligence technology in the field of natural language processing, but they have different objectives and functionalities. ChatGPT is primarily used for conversational exchange, whereas Wenxin Yiyao is primarily designed for generating textual content. ChatGPT places greater emphasis on the fluency, logic, and interactivity of the conversation, while Wenxin Yiyao focuses more on the creativity, completeness, and accuracy of the text).

3. The transformational significance of generative artificial intelligence systems in legal case analysis courses

3.1. Transformation of information retrieval: Equality of knowledge access and cognitive liberation

Although information technology has enabled students to access case information, legal provisions, legal interpretations, similar case judgments, legal doctrines, and social controversies more comprehensively and conveniently, this content is often fragmented. Therefore, in previous case analysis teaching, the cultivation of abilities such as how to use information resource libraries, how to find laws, and how to grasp and analyze social public opinion remained the focus of teaching and practice. Generative artificial intelligence, based on the original analytical artificial intelligence, further enhances the simplicity, comprehensiveness, and efficiency of case information retrieval, reducing the role and value of teachers in standardized and objective knowledge transmission in legal education. This lays a foundation for teachers to devote more energy to cultivating subjective speculative content such as legal thinking, legal reasoning, and value judgment. Moreover, on this basis, the application of generative artificial intelligence has been further advanced: it can provide initial summaries of case dispute focuses, statistics on similar related case information, and conclusions on the application of legal provisions. This allows artificial intelligence to intervene and replace the logical, reasoning, active, and subjective judgment tasks involved in the original case analysis teaching, such as case deconstruction, legal application, and knowledge point association. Such a more equal and standardized knowledge production model quickly bridges the gap in abilities and levels between students with different backgrounds, and even between students and teachers, in areas such as basic legal knowledge, case analysis thinking, related case retrieval, and case dispute focusing. It frees students from the need for cognitive resources and combination work (Crawford et al., 2023; Y. Zhang et al., 2023). This can achieve the so-called cognitive equality, which means that in terms of legal fundamentals and the acquisition and mastery of objective knowledge, students and teachers can equally access them through artificial intelligence, thus eliminating the original knowledge inequality. Cognitive equality will help achieve the goal of cognitive liberation. The integration effect of knowledge and information brought about by generative artificial intelligence greatly improves the efficiency and accuracy of classroom knowledge instruction, while also helping teachers shift more teaching focus to cultivating students' critical thinking skills, logical reasoning abilities, foresight, and

ability to dig into details. This can further liberate and expand students’ cognitive abilities, enhancing the depth, breadth, and dimensions of their legal thinking.

3.2. Creation of instructional context: Process sorting and role engagement

The process of case analysis is not only a reactivation and integration of existing legal knowledge, but also a means to comprehensively enhance students’ abilities in pruning case facts, establishing dispute focuses, understanding legislative purposes, resolving case disputes, and clarifying case procedures. To achieve this, it is necessary to encourage deeper participation, clear direction, and sustained dialogue during the analysis and discussion of cases. In the case of teaching, generative artificial intelligence systems can facilitate the sorting of case processes and immersive scenarios through methods such as fact sorting, role setting, multi-round dialogue, and environmental creation, thereby creating an interactive learning environment that is appropriate, immersive, integrated, and evocative.

On the one hand, generative artificial intelligence systems can comprehensively enhance the intuitiveness, immersion, and clarity of case teaching by optimizing case resolution processes (**Table 2**), summarizing case mind maps (**Figures 2 and 3**) (The generation of the mind map adopts the following method: Wenxin Yiyan generates a text-based mind map structure, and then the relevant text is copied into the mind mapping software Xmind, which automatically generates the mind maps listed in this article), and targeting the collation of theoretical resources. Through guided construction, generative artificial intelligence can summarize the dispute focuses of cases, indicate the analysis process, and construct argumentation models for different assertions, thereby stimulating students’ interest in learning, standardizing the direction of problem discussion, clarifying the scope of knowledge application, and organizing knowledge hierarchies.

Table 2. Comparison of controversy focus of typical cases in China and Abroad.

China		Abroad	
Name	Focus of controversy	Name	Focus of controversy
Sichuan Luzhou bequest case	Conflict and Balance Between Morality and Law	Antigone case	Conflict between morality and law
Henan college student sentenced for taking birds’ nests	Standards of judicial impartiality and rationality	Riggs v. Palmer	Whether profits obtained by fraud or wrongdoing can be supported by law
Zhao Chunhua was Sentenced for Setting Up A Shooting Booth	Conflict between legal standards and real-life cognition	The Cave Case	The relationship between moral judgment and legal judgment
Case of Kunshan Liu Hailong Was Killed	The boundaries of legitimate defense	New York Times v. Sullivan	Freedom of speech and its limitations
Guo Bing vs. Hangzhou Wildlife World Face Recognition Case	Legitimacy and rationality of the application of facial recognition technology	The trolley dilemma	Consequences of choices and assumption of responsibilities

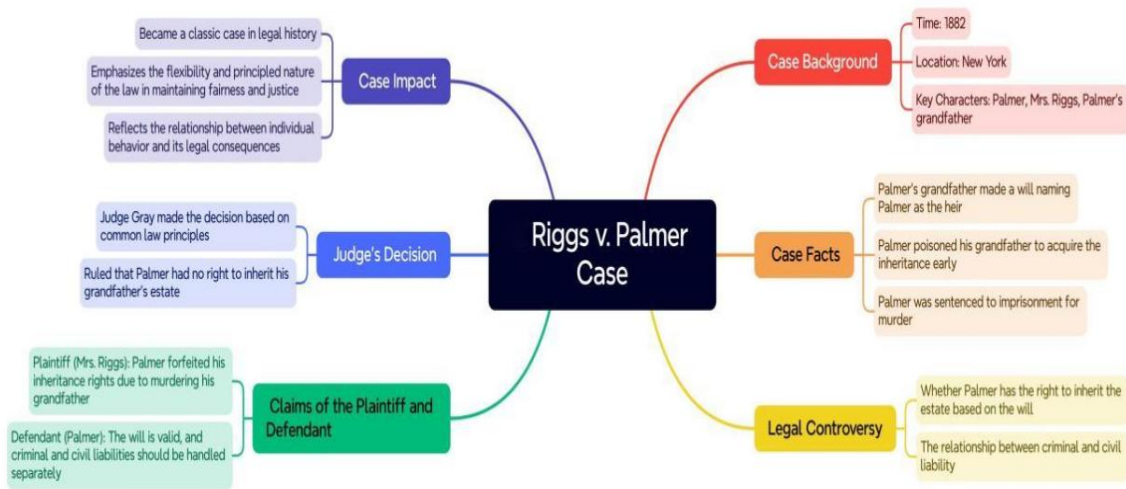


Figure 2. Mind map of Riggs v. Palmer.



Figure 3. Mind map of Sichuan Luzhou Inheritance Case.

On the other hand, the creation of teaching scenarios is another crucial approach in case teaching, especially when it requires students to experience different roles in case discussions. This can help students comprehensively grasp the thinking and strategies that different parties should adopt in resolving cases. Generative artificial intelligence, with its powerful capabilities in contextual learning, chain-of-thought reasoning, and multi-round dialogue, can set up dialogue scenarios to engage students in continuous conversations from different roles, thus providing them with diversified and personalized case-handling solutions, defense documents, judicial documents, etc. (Sang and Yu, 2023). For instance, in teaching the trolley problem case, we asked students to analyze and debate the case using a generative artificial intelligence system from the perspectives of a judge, prosecutor, defendant, victim, and defense attorney. From the teaching perspective, this approach not only enhances students' sense of participation and immersion but also trains their ability to interpret cases comprehensively and resolve them diversely, laying a solid foundation for improving their practical litigation skills and communication techniques throughout the entire process. Moreover, due to the differences in

prompting subjects, the emergence of knowledge capabilities, and the individuality of dialogue context construction, even the same generative artificial intelligence system may produce varying answers to the same question. Such information output provides more angles for analysis and reflection in case discussion courses, further opening up topic discussions, fostering collisions of ideas, expanding knowledge scopes, and comprehensively enhancing students' innovative thinking.

3.3. Examination from multiple perspectives: Interdisciplinary and cross-cultural reflection

The integration and output of knowledge by generative artificial intelligence systems are not constrained by a single discipline or a single answer. Instead, they provide interdisciplinary and cross-cultural answers based on different question-and-answer contexts. On the one hand, the conclusions provided by generative artificial intelligence are not limited to a single legal theory, but offer different perspectives based on various schools of thought such as economic law, positivist jurisprudence, sociological jurisprudence, and analytical jurisprudence. In case analyses, generative artificial intelligence systems also take into account the differences in legal culture, judicial systems, and judicial philosophies encountered in different domestic and international cases. This allows the system to selectively focus on the theoretical perspectives that are most relevant to the cultural background of each case. On the other hand, the responses are not confined to the field of law alone. They also draw from multiple disciplines, including statistics, sociology, psychology, ethics, and political science, to provide theoretical support for different case verdicts. This approach undoubtedly breaks down the invisible disciplinary barriers inherent in traditional legal education, avoiding issues such as a singular knowledge catalog, a flat knowledge system, and outdated content. Furthermore, a multidisciplinary perspective helps students analyze problems and construct rule systems from multiple standpoints, including policy, law, and ethics. This fosters complementarity between academic knowledge, crossover of academic and practical abilities, extension of legal thinking, and systematization of cognitive methodologies. It holds positive significance in nurturing high-end interdisciplinary talents with integrated thinking (Wang et al., 2022; Wang and Liu, 2023).

Furthermore, due to differences in the training databases, different types of generative artificial intelligence systems can demonstrate the disparities between different legal and historical cultures in their analysis of the same case. For instance, in teaching, we have observed that Baidu's Wenxin Yiyan system tends to adopt a conciliatory mindset when responding to similar questions, offering multiple solutions while avoiding over-emphasis on a single approach. In contrast, ChatGPT, developed by OpenAI, often exhibits a preference for economical and efficient solutions in its responses. This bears similarities to the differences between Chinese and American legal cultures. For instance, in discussions about the trolley problem, students using Wenxin Yiyan often adopt a conciliatory viewpoint. This is because, even when students explicitly ask the generative artificial intelligence system to provide a definitive choice and supporting reasons, Wenxin Yiyan still tends to add additional information pointing out that the other choice should also be understood,

along with relevant supporting reasons. Moreover, in case handling, for domestic cases, the judgments and reasons provided by the Wenxin Yiyan system tend to be closer to the thinking and conclusions of real-life case handling, while ChatGPT demonstrates corresponding advantages when dealing with foreign cases. The collision of diverse legal cultural knowledge has a positive impact on motivating students to actively understand the differences between different legal cultures and the underlying generative logic behind them. Through comparison, students gain a more vivid and profound understanding of legal issues, reflection on controversial viewpoints, and the influence of social backgrounds on legal culture.

4. The practical dilemma of applying generative artificial intelligence systems in legal case analysis courses

4.1. Weakening of student autonomy

Through empirical analysis of over 3000 students at Berkeley School of Law and Hastings College of the Law, Shultz and Zedeck (2011) concluded that noncognitive abilities have a more profound impact on students' future legal careers than cognitive abilities such as UGPA, LAST, and 1LGPA (grade point average in the first year). The autonomy mentioned in this article refers to students' non-cognitive abilities such as independent thinking, decision-making, analytical judgment, and open innovation in case studies. In classroom teaching, we have found that the use of generative artificial intelligence systems is gradually eroding these abilities among students.

Firstly, because generative artificial intelligence can provide accurate, coherent, and readable knowledge content in a short period of time, it means that during the process of analyzing cases, the process of students searching for, reading, understanding, and mastering basic concepts, legal provisions, similar cases, and other related knowledge is replaced or simplified, and the time required is shortened. This can lead to a lack of motivation for students to conduct in-depth and detailed analysis of cases and comprehensive and deep reflection on controversies. As a result, some controversies often remain superficial and fail to touch the core of the dispute and the ontology of relevant legal knowledge, further affecting the depth of classroom discussions. The lack of cognition, understanding, and mastery of basic knowledge undoubtedly reduces the systematicness and balance of students' knowledge application, knowledge production, and cognitive methods, making it impossible for them to accurately and flexibly understand and apply the law under changing case conditions (Sun and Shen, 2024).

Secondly, the key difference between generative artificial intelligence and other intelligent systems lies in its ability to continuously adjust parameters and knowledge combinations based on relevant prompts and dialogue contexts through multi-round open conversations and feedback learning, thereby continuously revising the output content. Although this dialogue approach disrupts the traditional mode in legal education where intelligent systems merely provide discrete knowledge resource indices or lists for teachers and students, enabling continuous feedback, follow-up, clarification, and innovative combinations of knowledge, this

innovative way of generating case-handling conclusions undoubtedly increases students' dependency on the judicial conclusions and thinking derived from generative artificial intelligence systems, gradually weakening their critical, interpretive, and extension thinking needed to handle cases, and further solidifying their fixed-mindset approaches. For instance, while students may agree with the principle that "no one should profit from their illegal actions" in the case of "Riggs v. Palmer" and extend it to the "Luzhou Inheritance Case in Sichuan" to arrive at the concept that "no one should profit from their immoral actions," in the teaching process, once elements such as the caregiver's meticulous daily care for the decedent and the notarization of the relevant will are introduced, many students find it difficult to reasonably handle the relevant case facts by extending their argumentative thinking or changing their position.

Thirdly, the application of generative artificial intelligence hinders students from exercising creative thinking in solving cases. Creative thinking comes from the combination of knowledge, curiosity, and imagination (Qian, 2018). Although the answers provided by the generative artificial intelligence system may vary depending on the way the question is asked and the combination of knowledge used. Due to the consistency of the system's operational logic and the learned database, the core answers of the generative artificial intelligence system to the same question have a high degree of internal consistency. However, the roughly same answer output can easily cause students to consume a lot of energy on homogenized content in group discussions and classroom discussions, thereby reducing the curiosity and imagination generated by the collision of different viewpoints, and also reducing the spillover effect of unstable expectations. For example, in classroom discussions about the conflict between morality and law in the four cases of Kunshan Counterattack Case, Luzhou Bequest Case, Antigone, and the Cave Mystery, the generative artificial intelligence almost always gives the same answer: "Related issues are complex and controversial, and should be considered from multiple perspectives based on specific circumstances." This has led students to often hold a dialectical thinking and philosophy when discussing these issues, unable to take a clear-cut stand from a single perspective, thus affecting the depth of discussion and eliminating more possibilities for colliding viewpoints.

The rule of law is governance based on reason and speculation, and legal education needs to focus on cultivating students' independent judgment and innovative thinking. This will enable students to comprehensively examine the cultural traditions, social backgrounds, and justice demands implied behind case disputes when faced with situations such as rule vacuums, conflicts, ambiguity, and conflicts between rule application and current social justice concepts. It will also allow them to exercise creative thinking to optimize defense strategies, update legal concepts, and respond to social demands (Chen and Lv, 2020). However, the use of generative artificial intelligence reduces students' substantial participation in case analysis, potentially leading to issues of "empty talkism" under technological dominance (Wu et al., 2023).

4.2. The avoidance and misguidance of value choices

How to face and resolve new, complex, and difficult cases is a crucial aspect of both academic and practical thinking for law students. When dealing with such cases, the simple approach of merely piecing together legal provisions with factual elements often fails, necessitating a comprehensive utilization of various legal methods and legal thinking to engage in value judgments. While generative artificial intelligence has overcome the limitations of traditional analytical artificial intelligence in terms of value judgments, it still faces issues of avoidance and misguidance in value choices when analyzing specific cases.

On one hand, to avoid excessive strict regulation and public panic, there is often a strong emphasis on political correctness and value recognition in the construction and testing of generative artificial intelligence. However, such standardized settings do not provide substantial and helpful solutions for value disputes in cases. While this approach of avoiding intervention in value disputes significantly reduces the risk of generative artificial intelligence outputting toxic, harmful information and adverse values, it often results in ambiguous and “correct but useless” value judgment solutions for cases that require value measurement and choice. This not only lacks guiding value for case resolution but also contradicts the principle that real judicial cases must provide solutions to problems (judges must make decisions) (The principle of ‘judges must not refuse to adjudicate’ has become a fundamental principle recognized and adhered to as a judicial common sense by the majority of countries and regions in the world (Fan, 2020). In cases such as the Luzhou Bequest Case in Sichuan and the Riggs v. Palmer case, some students may ask generative artificial intelligence to rule that a will is valid. However, before reaching a valid conclusion, the generative artificial intelligence may add a statement like “If the will does not violate public order and good customs, then it can be considered valid.” Additionally, it may attach a comment such as “It is also necessary to consider the influence of public opinion and moral concepts on the case, seeking a balance between respecting the law, safeguarding social and public interests, and respecting the wishes of the testator, to ensure that the verdict is fair, legal, and reasonable.” While such an answer may seem to have no value issues on the surface, it actually does not provide genuine and helpful advice for reaching a conclusion in the case. After students are exposed to this type of value processing method excessively, they may also encounter problems of vagueness or idling in debates on case value disputes. Such a way of thinking can seriously weaken their ability to think and resolve related issues after they start practicing.

On the other hand, the use of generative artificial intelligence in case-based teaching also presents implicit issues of value bias. Studies have shown that, due to the influence of training data, ChatGPT’s responses exhibit implicit discrimination or stereotypical tendencies, resulting in unfair predictions and evaluations towards individuals such as disabled persons, ethnic minorities, and impoverished populations (Zhuo et al., 2023). Influenced by the developers’ objectives, designers can steer ChatGPT to generate programs that determine whether to accept job applicants based on factors such as gender, region, and race during its development and usage (Choi, 2023). Similar issues are inevitable in legal education. Subject to

the influence of different linguistic cultures, legal cultures, and network data, generative artificial intelligence may implicitly incorporate consensus-based value biases from various linguistic and cultural datasets when providing answers to case analysis (Omiye et al., 2023). Additionally, in question-and-answer learning, if some students have preferential value choices and continuously guide and prompt the generative artificial intelligence system, the system may adapt to the role and cater to the users' preferences, resulting in the system outputting more academic viewpoints and judging tendencies that align with the students' value preferences. This can further exacerbate the students' original stereotyped value choices. For instance, in scenarios such as the cave case and the trolley problem, some students adhere to the belief that life is invaluable and should not be quantified. This belief even carries over into discussions about the Kunshan counter-killing case, where they base their arguments on this concept and demand that generative artificial intelligence provide supporting arguments. Consequently, during classroom discussions, they argue that even if the requirements for legitimate defense are met, excessive measures should not be taken to deprive the aggressor of their life. Notations in debates on case value disputes. Such thinking patterns can severely weaken their ability to think and resolve related issues after entering the profession.

4.3. The misleading issue of false and misleading information

Currently, there exists a serious issue of misleading outputs of false and erroneous information in generative artificial intelligence. This issue mainly manifests in the following three aspects: firstly, the problem of generating fictitious information (W. X. Zhang et al., 2023). Secondly, the issue of generating and disseminating erroneous information is also known as the problem of "speaking nonsense with a serious tone" (Fang and Tang, 2023). Thirdly, the problem of generating and spreading misleading and inflammatory information (Deshpande et al., 2023). The reasons for this issue lie in several factors. On one hand, generative artificial intelligence follows the generation logic of meaning matching and calculates text generation through the method of maximum probability. However, actions based on probability cannot comprehend the practical significance of the generated content, thus making it difficult to guarantee the authenticity of the content (Park et al., 2023). On the other hand, most of the pre-training data for generative artificial intelligence comes from the internet (**Table 3**). Due to the lack of effective data auditing, strict data supervision, and robust data cleaning mechanisms, these internet data inevitably contain false, discriminatory, violent, illegal, and unstructured information (Zhao et al., 2023). During the pre-training process, the generative artificial intelligence system is inevitably influenced by these data, resulting in the generation of information that violates the requirements of authenticity and objectivity.

Despite the evident issues of generating false and erroneous information, students, in the long-term use of related systems, are still susceptible to factors such as "conformity," "cognitive miserliness," and "responsibility isolation mindset." These factors can lead to a dependency mindset and even unconditional trust in the answers provided by generative artificial intelligence (Busch and Henriksen, 2018;

Linda et al., 1999). Scholars have summarized this phenomenon, stating that “due to factors such as trusted automation logic, lack of time, pursuit of convenience, and avoidance of responsibility, even when explicitly recognizing that automation systems are merely auxiliary tools and their decision-making content is unreliable, people still tend to trust the instructions they provide” (Skitka et al., 2011).

Table 3. Main network data sources of partially generative artificial intelligence system.

Name of generative artificial intelligence	Main source of network data
GPT-4	Common Crawl, WebText 2, Wikipedia
Wenxin Yiyan	Web pages, Blogs, Forums, Wikipedia, and social media content
LLaMa	Stack Exchange, Common Crawl, C4, Github, arXiv
Palm	Github, multilingual Wikipedia, and conversation information from social media

Such issues arise specifically in the classroom learning process. Through a survey of students’ attitudes towards the review of information generated by generative artificial intelligence systems across different weeks of teaching (**Table 4**). In the initial stages, students generally had a low level of trust in the answers provided by generative artificial intelligence for case discussion questions. Most students would carefully review the information output by the system. However, as time progressed, this situation gradually changed, with students’ trust in the relevant information continuously increasing. In the end, approximately one-third of the students only reviewed the key content, while another one-third no longer carefully discriminated against the information provided by the generative artificial intelligence system. Even when they were explicitly informed of the problem of inaccurate information output by the system, many students had already discovered issues with information biases in the early stages of their learning.

Table 4. Statistical table of students’ attitudes towards the censorship of information generated by generative artificial intelligence.

Teaching week	Carefully censor	Focused censorship	No censorship
1	2	3	4
22	18	15	11
1	4	7	9
1	2	2	4

Through a survey of students who have completely trusted the information output by generative artificial intelligence (**Table 5**), we found that the majority of them mentioned that verifying the content of the system’s output requires a significant amount of time, which may even exceed the time saved by using the artificial intelligence system. This is contrary to the original intention of employing generative artificial intelligence systems. Many students also expressed that since the answers provided by the system are closer to academic language expression and can offer abundant materials as support, they tend to unconsciously develop a dependency mindset, given that the machine possesses more database knowledge than students. Additionally, in the specific analysis of cases, the phenomenon of

responsibility isolation serves as a crucial factor that discourages students from further verification. Even when pointed out for biases in summarizing case facts, applying legal provisions, or citing legal interpretations, they justify it by claiming that these biases stem from the machine’s conclusions, not their own. This reduces the psychological burden students may feel when applying incorrect information.

Table 5. Statistical table of reasons why students did not conduct censorship in the last week.

Trust the machine	No need to be responsible	Lack of time	Pursuit of convenience	Others
4	3	4	5	2

However, legal case analysis is a highly rigorous, meticulous, and realistic task. Even if there are minor errors in the output of generative artificial intelligence after optimization, students’ recognition and trust in relevant information without discrimination violate the pursuit of fairness and justice and may have a significant adverse impact on the personal and property safety of the parties involved in the case. Therefore, we must help students recognize this issue and strive to overcome the risk of over-trusting machines brought by the application of generative artificial intelligence systems.

4.4. The direction of reform for legal case analysis courses in the era of generative artificial intelligence systems

With its powerful natural language processing capabilities and autonomous information generation abilities, it has become a trend for generative artificial intelligence to be fully integrated into daily work, life, entertainment, scientific research, and other activities. However, it also brings about divisions in knowledge systems, the interconnectedness of knowledge and power, as well as the infiltration of technological knowledge (Foucault, 2012). For legal education, generative artificial intelligence has further emphasized the teaching methods and educational philosophy that, “Thinking is more important than knowledge, questions are more important than answers, and logic is more important than enumeration” (Shen and Zhu, 2023). Facing the trend of generative artificial intelligence catalyzing a new “teacher-machine-student” teaching model and accelerating “human-machine collaboration” learning, we should appropriately adapt the forms, models, concepts, and directions of legal education to respond to the challenges and demands posed by the application of generative artificial intelligence to legal education (Zheng et al., 2024).

4.5. Ability cultivation shift: From solving problems to posing questions

Since generative artificial intelligence possesses learning capabilities in interactive dialogues, it adjusts its output preferences based on human annotations and reward models. Therefore, during the process of interacting with the generative artificial intelligence system, the user’s questioning logic, methods, output content, and preference settings not only affect the quality of information obtained from the system, but also influence the system’s information preferences, thinking patterns,

and interactive capabilities to a certain extent. It has been demonstrated that the better the questions posed, the higher the quality of answers received, and the more conducive it is to improve the system's natural language understanding and information output capabilities.

For legal education, the extraction of problem keywords, the sorting of problem-solving steps, and the positioning of roles in case handling need to be further integrated with the characteristics of generative artificial intelligence question-answering models, the operational logic of programming, and the understanding of role settings. Therefore, beneficial guidance and effective questioning will directly affect the quality of answers provided by the generative artificial intelligence system and the degree of system optimization. To ensure optimal answers during the human-machine interaction process, it is necessary to focus on cultivating students' ability to ask questions.

On one hand, it is essential to strengthen the cultivation of students' ability to structurally sort and hierarchically decompose relevant controversial issues implicit in cases. Enhancing students' abilities in case module decomposition, controversy hierarchy slicing, causality arrangement, knowledge graph mapping, and other layered, step-by-step, and categorical skills can help them improve the coherence, hierarchy, and logic of their questioning methods. This can better guide generative AI to gradually understand the asker's advanced thinking and reasoning chain, accurately perceive the asker's intention, process a set of instructions coherently, and imitate the structured thinking process of human case handling, thereby realizing the visualization of the process of generative AI case handling (Zhao et al., 2024).

On the other hand, it is necessary to strengthen students' understanding and learning of digital thinking and computer programming logic languages. Although the application of generative artificial intelligence and its multimodal access, backed by powerful natural language understanding and interaction capabilities, enables users without programming knowledge to communicate instructions to machines without obstacles, the machine merely replaces the step of converting natural language into a programming language. However, when understanding and processing related issues, the artificial intelligence system still follows programming thinking and logic. Therefore, we should attach importance to cultivating the mathematical and logical thinking of law students, guiding them to provide clearer instructions, construct a clearer context, decompose complex tasks more reasonably, accurately set dialogue roles and styles, and improve the iteration of relevant prompts languages during human-machine interactions. the success of generative artificial intelligence case handling (Zhao et al., 2024).

4.6. Enhancement of autonomy: Transition from passive acceptance to active judgment

Addressing the issue of the decline in student autonomy due to the application of generative artificial intelligence systems, Crompton and Ren (2023) pointed out that in the face of the loss of students' autonomous thinking, teachers should embrace generative artificial intelligence and guide students to shift from passive to active roles, becoming discerning knowledge consumers and proactive learners who

can master ChatGPT. In the context of legal education, generative artificial intelligence not only provides content such as case indexes, legal provisions, and legal interpretations, but also cites the views of scholars or schools of thought, and even proposes case judgments based on weighted analysis of factors. To avoid excessive weakening of student autonomy and the formation of fixed thinking patterns, it is not only necessary to cultivate students' ability to understand relevant judgments and academic views based on the background of cases but also to cultivate their ability to engage in dissenting arguments, logical construction, and deep thinking based on theoretical thinking, logical reasoning, gap filling, legal argumentation, and legal reasoning.

In legal education, to cultivate students' autonomous analytical skills, we should neither neglect the objective knowledge provision, analytical process guidance, and basic conclusion judgment brought by generative artificial intelligence nor blindly follow it. Therefore, it is advisable to advocate a combination of humans and machines, but require students to independently review the content during classroom teaching and after-class practice. For instance, students can be allowed to use generative artificial intelligence to generate basic frameworks and sentences based on prompts such as questions, viewpoints, ideas, and intentions. The application of artificial intelligence systems in students' discussions and assignments to provide simulated data and analytical conclusions is also permissible. Additionally, generative artificial intelligence can be used to provide case referrals, academic viewpoint summaries, and guidance on key points of adjudication. However, after these suggestions are made, it is still necessary for students to review, screen, revise, and confirm the content (Ren, 2023). Such an application of generative artificial intelligence not only ensures its positive role in legal education but also enhances students' autonomous analytical and judgment skills. Technically, we can develop and improve generative artificial intelligence systems capable of outputting watermarked outputs to avoid students' over-reliance on artificial intelligence systems and reluctance to actively review relevant content (Zhu and Yang, 2023).

Furthermore, it is necessary to strengthen the cultivation of justice value concepts as well as the ability to critically question and reflect. Apart from knowledge education, value education plays a significant role in legal education, particularly in the context of insufficient value argumentation and potential value misguidance in generative artificial intelligence. Reinforcing fundamental value education in legal education regarding fairness, justice, freedom, democracy, and other principles is particularly crucial. In case-based teaching, teachers need to fully guide students in exploring the challenges posed by relevant disputes behind difficult and complex cases to the predictability, inclusiveness, stability, and acceptability of the law. On one hand, this involves cultivating students' thinking in legal interpretation, legal development, and legal transplantation, thereby guiding them to correctly apply value selection methods. On the other hand, it is necessary to comprehensively enhance students' ability to transfer knowledge and respond to social justice demands, thus cultivating their capacity to make acceptable and predictable decisions in case handling.

4.7. The return to basics: Enhancing the ability of knowledge presentation and knowledge restoration

Neither the ability to judge the legality, rationality, and correctness of the output from generative artificial intelligence nor the creative and open-minded thinking in actively handling complex cases based on case needs and legal interpretation skills arise out of nowhere. Although it can be reasonably assumed that graduate students in law possess a certain foundation of legal knowledge and legal thinking for case analysis courses, we have observed a noticeable decline in students' attitudes and ability to grasp and retain basic knowledge due to the influence of technologies such as mobile internet and artificial intelligence. The tolerance of generative artificial intelligence technology in classrooms has further reduced students' motivation to consolidate, review, and memorize relevant basic knowledge. Although the application of generative artificial intelligence may exacerbate the difficulty in cultivating basic legal knowledge and skills, it does not negate the fundamental role of these basics in shaping students' overall quality. This underscores the need for legal education to focus on overcoming students' dependence on digital systems and strengthening and optimizing their basic legal literacy education.

On the one hand, in the era of generative artificial intelligence, it is still necessary to emphasize the importance of strengthening the cultivation of students' knowledge presentation abilities, such as information discrimination, data organization, structural analysis, logical reasoning, and written expression. The reasons are threefold. Firstly, generative artificial intelligence systems cannot independently verify the quality and accuracy of learning data, nor can they validate every generated result (Yang, 2023). This places higher demands on students' basic literacy, requiring them to lay a solid foundation in their studies and possess keen abilities in information review, discrimination, and reorganization. By doing so, they can ensure their autonomy in learning and reduce the risk of information misguidance caused by the application of generative artificial intelligence. Secondly, generative artificial intelligence models have great potential for training and application in the vertical field of law, thus providing students with new employment opportunities as algorithm model trainers. To meet the demands of model training and fine-tuning, students must possess solid basic literacy in law. Finally, cultivating students' abilities to present knowledge in a structured, logical, and standardized manner will help them continuously optimize the quality of datasets in the application and production cycle of legal data. This is an important guarantee for further enhancing the professionalism and accuracy of generative artificial intelligence systems and fostering a beneficial ecosystem for system application and optimization.

On the other hand, the systematic development of knowledge presentation abilities, such as writing expression and information organization, requires the support of knowledge restoration abilities. For legal research and practice, innovative thinking and empathy thinking do not arise spontaneously. Instead, they require students to extend and expand their understanding based on the existing knowledge system and knowledge production patterns. Over-reliance on generative artificial intelligence systems while completely neglecting the cultivation of basic knowledge

may lead to mental inertia and a void in knowledge utilization (Zhang, 2023). Only when students can understand the implicit knowledge occurrence scenarios, knowledge construction paths, and knowledge generation purposes behind different legal theories and case handling methods can they effectively respond to the leapfrogging of the generative artificial intelligence over the process of legal knowledge generation and penetrate the black box of algorithm systems' efficiency-oriented and single-answer outputs. Therefore, in the teaching process, teachers need to pay more attention to restoring the knowledge generation process overlooked by generative artificial intelligence. Through logical deduction of the legal knowledge system, specific presentation of legal knowledge content, tracing the original meanings of legal concepts, and gradual deduction of causal chains, teachers can train students' inductive and participatory abilities. This process is not only an experience of the inherent laws of legal knowledge, but also a cultivation of students' abilities to discover, explore, and construct thinking.

4.8. Cultivating digital literacy: Enhancing both digital skills and humanistic spirit

In the face of the comprehensive digital reform of society and education, as well as the new challenges posed by generative artificial intelligence to legal education, it is necessary to comprehensively cultivate students' digital literacy to adapt to the new changes and requirements brought by the digital era for the study of legal knowledge and the cultivation of legal thinking. For law students, the focus of cultivating digital literacy lies in their abilities in digital discrimination and digital technology application.

Firstly, it is necessary to cultivate students to transform from mere users of generative artificial intelligence systems into rational cognizers of the operational logic, inherent limitations, and impacts on the autonomy of generative artificial intelligence technology. When applying generative artificial intelligence systems to the teaching of legal knowledge and case analysis, it is essential to add lectures on relevant knowledge of artificial intelligence to help students dialectically view the impact of generative artificial intelligence technology on legal learning and practice.

Secondly, it is important to cultivate students' ability to distinguish and screen information provided by generative artificial intelligence. In legal education, this means cultivating students' ability to find and identify authoritative information sources, identify biases in the understanding of cases and legal provisions by generative artificial intelligence systems, discern invalid value judgments, and efficiently identify the authenticity of information during teaching.

Lastly, it is crucial to cultivate students' ability to maintain independent thinking through communication and criticism when faced with information cocoons constructed by continuous conversational information flows from generative artificial intelligence. This requires guiding students to clearly understand the limitations of machine-dependent thinking when applying generative artificial intelligence in legal classroom teaching, and encouraging them to analyze and debate controversial issues or case focal points from different perspectives.

Furthermore, strengthening the cultivation of students' humanistic spirit and

enhancing their ability to respond to social justice demands, as well as their sensitivity to common sense, emotions, and rationality, and their appreciation for the compassionate aspect of the law, is another crucial aspect of avoiding students being influenced by the mechanical justice concepts of generative artificial intelligence systems. When facing novel, difficult, and hot cases in complex scenarios, social and emotional competence, such as moral pursuits, empathy, and sympathy, serve as an important guarantee for upholding the value of fairness and justice in legal research and practice (Zhou and Wang, 2023). Therefore, during the teaching process, teachers should pay attention to identifying and diluting the standardized and quantitative thinking followed by generative artificial intelligence systems, and focus on cultivating students' humanistic literacy and cultural connotation (Liu and Wang, 2023). Specifically, this means guiding students to practice moral rationality in value disputes, adhere to mainstream values in conflicts between law and reason, and respect cultural diversity in conflicts between multiple ideologies. It also helps students fully utilize their conscience, sense of justice, empathy, and compassion to engage in situational imagination and emotional integration when facing controversial and metaphorical cases involving value conflicts, ethical disputes, and class antagonisms (Chen and Wang, 2024). Only in this way can the significance and value of the humanistic spirit be fully realized after generative artificial intelligence becomes fully involved in legal research and application.

5. Conclusion

Based on the reform practice of applying generative artificial intelligence systems to the teaching of legal case courses, this article systematically explores the potential positive and negative impacts of generative artificial intelligence on legal education. On the positive side, the application of generative artificial intelligence can enhance the quality of classroom teaching through innovative combinations of knowledge, improve students' immersion in case analysis by creating teaching scenarios, and broaden and enrich students' thinking by providing interdisciplinary and cross-cultural perspectives. However, some negative issues have also emerged in classroom teaching, such as students' over-reliance on machines, resulting in weakened independent judgment abilities. Additionally, the systematic avoidance of value judgments or the output of discriminatory views can reduce the objectivity and fairness of students' value judgments. Students may also be influenced by false or erroneous information output by generative artificial intelligence. Due to limitations in teaching methods, teaching philosophies, teaching models, technological development, and sample data, the discussion in this paper on the prospects of legal education in the era of generative artificial intelligence inevitably has certain limitations. For example, in terms of data representativeness, this paper has some deficiencies. Although small-sample exploration of cases and a limited number of students in class can avoid excessive review processes that could affect curriculum reform experiments and enhance the flexibility of classroom experiments, the insufficient number of cases and students inevitably affects the diversity of analytical perspectives in this paper, as well as the accuracy and representativeness of related qualitative research. Therefore, based on this curriculum reform experiment, we will

gradually expand the use of generative artificial intelligence in legal education classrooms to further improve and optimize relevant curriculum reform suggestions. Additionally, many of the research conclusions in this paper, especially those related to the practical difficulties of applying generative artificial intelligence to legal case analysis courses, are mostly based on classroom questions and student performance. However, this paper lacks in-depth and targeted examination and analysis of real operational data regarding specific issues such as biases and discrimination in generative artificial intelligence systems. This may affect the precision of the conclusions drawn in this paper. Therefore, we will continue to pay attention to this issue and explore the application of generative artificial intelligence systems in more areas of legal education, providing more feasible, referential, and forward-looking suggestions for the comprehensive reform of legal education.

Author contributions: Conceptualization, WW and ZX (Zhilang Xu); methodology, WW; software, ZX (Zichun Xu); validation, WW, ZX (Zhilang Xu) and ZX; formal analysis, ZX (Zhilang Xu); investigation, WW and ZX (Zichun Xu); resources, ZX (Zichun Xu); data curation, ZX (Zhilang Xu); writing—original draft preparation, WW and ZX (Zhilang Xu); writing—review and editing, WW and ZX (Zichun Xu); visualization, ZX (Zhilang Xu) and ZX (Zichun Xu); supervision, ZX (Zhilang Xu) and ZX (Zichun Xu); project administration, WW; funding acquisition, WW. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the project “Research on the innovation of science-education integration and cooperative education model based on artificial intelligence” (Grant No: 44), funded by the “2023 Graduate Teaching Construction Project of Sichuan University of Science and Engineering”.

Acknowledgments: We would like to thank the reviewers for the beneficial suggestions that helped improve this paper.

Conflict of interest: The authors declare no conflict of interest.

References

- Busch, P. A., & Henriksen, H. Z. (2018). Digital discretion: A systematic literature review of ICT and street-level discretion. *Information Polity*, 23(1), 3–28. <https://doi.org/10.3233/ip-170050>
- Chen, R., & Wang, W. Y. (2024). Analysis of the Role Orientation of Judicial Artificial Intelligence and Human Judges. *Journal of Chongqing University (Social Science Edition)*, 1–16.
- Crawford, J., Cowling, M., & Allen, K. A. (2023). Leadership is needed for ethical ChatGPT: Character, assessment, and learning using artificial intelligence (AI). *Journal of University Teaching and Learning Practice*, 20(3). <https://doi.org/10.53761/1.20.3.02>
- Choi, C. Q. (2023). Columbia Perspectives on ChatGPT. Available online: <https://datascience.columbia.edu/news/2023/columbia-perspectives-on-chatgpt/> (accessed on 23 January 2024).
- Chen, Z. Z., Shi, Y. W., & Wang, M. K. (2023). The realistic prospect of artificial intelligence promoting educational reform—an analysis of teachers’ coping strategies for ChatGPT. *Journal of Guangxi Normal University (Philosophy and Social Sciences Edition)*, 16(4), 1–11.
- Chen, J. Z., & Lyu, Y. Z. (2020). *Research on Legal Methodology Focusing on Thinking Rules*. Peking: Peking University Press.
- Crompton, H., & Ren, G. H. (2023). *The Era of ChatGPT: How to Innovate in Education*. Available online: <https://baijiahao.baidu.com/s?id=1759698185379105617&wfr=spider&for=pc> (accessed on 6 March 2023).
- Deshpande, A., Murahari, V., Rajpurohit, T., et al. (2023). Toxicity in ChatGPT: Analyzing persona-assigned language models.

- Findings of the Association for Computational Linguistics: EMNLP 2023. <https://doi.org/10.18653/v1/2023.findings-emnlp.88>
- Fan, W. (2020). The historical evolution and development of “judges must no refuse the referee”. *Academia Bimestris*, (06), 173–179.
- Feng, Y. H. (2023). The application value, potential ethical risks, and governance pathways of ChatGPT in the field of education. *Ideological and Theoretical Education*, (04), 26–32.
- Fang, S. S., & Tang, Q. Y. (2023). Smart but misled: a typological analysis of ChatGPT’s incorrect content generation. *Journalism and Writing*, (04), 31–42.
- Foucault, M. (2012). *Discipline and Punish*. Shanghai: Shanghai Sanlian Publishing House.
- Hua, L. C. (2021). What kind of education do undergraduate students in law schools need in the era of legal artificial intelligence—macro framework and micro solutions? *Legal Education Research*, 33(02), 90–116.
- Katherine, R. K. (2013). Legal Education and Professional Skills: Myths and Misconceptions about Theory and Practice. *McGeorge Law Review*, 45(1), 7–50.
- Li, Z. T. (2023). The Subversion and Resetting of the “Foundation” of Basic Education by ChatGPT/Generative Artificial Intelligence. *Journal of East China Normal University (Educational Sciences Edition)*, 41(07), 47–55.
- Luo, W. P., & Gao, Z. C. (2020). The Selection of Training Modes for Artificial Intelligence Rule of Law Talents. *Shandong Social Sciences*, (11), 97–102.
- Linda J. S., Kathleen L. M., & Mark B. (1999). Does Automation Bias Decision-making? *International Journal of Human-Computer Studies*, (51), 991–1006.
- Liu, M. F. (2022). Teaching Reform and Innovation of Law Courses Based on Artificial Intelligence Features. *China Higher Education*, (11), 53–55.
- Liu, K. L. (2020). How to Consolidate the Foundation: How Should Legal Education Respond to the Era of Artificial Intelligence? *Shandong Social Sciences*, (11), 91–96.
- Liu, Y. M., & Wang, C. L. (2023). Actively Responding to the Challenges of Generative Artificial Intelligence in Liberal Arts Education. *Nanjing Journal of Social Sciences*, (06), 119–128.
- Omiye, J. A., Lester, J. C., Spichak, S., et al. (2023). Large language models propagate race-based medicine. *Npj Digital Medicine*, 6(1). <https://doi.org/10.1038/s41746-023-00939-z>
- Park, J. S., O’Brien, J., Cai, C. J., et al. (2023). Generative Agents: Interactive Simulacra of Human Behavior. In: *Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology*. <https://doi.org/10.1145/3586183.3606763>
- Qian, Y. Y. (2018). Critical Thinking and Creative Thinking Education: Concepts and Practices. *Research on Education Tsinghua University*, (4), 1–16.
- Ren, W. D. (2023). Legal Education Needs to Face and Respond to the Development of Generative artificial intelligence, Democracy and Legal Times. Available online: http://e.mzyfz.com/paper/2114/paper_56651_11677.html (accessed on 18 October 2023).
- Shultz, M. M., & Zedeck, S. (2011). Predicting Lawyer Effectiveness: Broadening the Basis for Law School Admission Decisions. *Law & Social Inquiry*, 36(03), 620–661. <https://doi.org/10.1111/j.1747-4469.2011.01245.x>
- She, S. S., & Zhu, Z. T. (2023). ChatGPT-like Products: Internal Mechanisms and Their Impact on Learning Evaluation. *Distance Education in China*, (4), 8–15.
- Sang, J. T., & Yu, J. (2023). Exploring Future Trends and Challenges of AI from the Perspective of ChatGPT. *Journal of Computer Research and Development*, 60(6), 1191–1201.
- Sun, L. H., & Shen, W. L. (2024). On the Destiny Community of Generative Artificial Intelligence in Education. *Electrifying Education Research*, 45(02), 20–26.
- Skitka, L. J., Mosier, K., & Mark, D. (1999). Does Automation Bias Decision-making? *International Journal of Human-Computer Studies*, 51(5), 91–1006. <https://doi.org/10.1006/ijhc.1999.0252>
- Skitka, L. J., Mosier, K., & Mark, D. (2011). Accountability and automation bias. *International Journal of Human-Computer Studies*, (52), 701–717. <https://doi.org/10.1006/ijhc.1999.0349>
- Wang, T. E. (2023). The characteristics, educational significance, and responses to issues of ChatGPT. *Ideological and Theoretical Education*, (04), 19–25.
- Wang, Y., Shen, W. X., & Long, W. Q., et al. (2022). The Cultivation of Compound Rule of Law Talents in the New Era (pen talk). *Journal of Northwestern Polytechnical University (Social Sciences)*, (2), 106–123.

- Wang, X. G., & Liu, J. (2023). On the construction of the experimental teaching system of digital law course. *Chinese Journal of University Teaching*, (12), 46–55.
- Wu, N. Z., Chen, X. Z., & Feng, Y. (2023). From “disorder” to “order”: the shift of generative artificial intelligence applications in education and its generation mechanism. *Journal of Distance Education*, 41(06), 42–51.
- Xiao, J. M., & Sun, Y. N. (2023). Problems and countermeasures in the cultivation of computational legal talents. *Southeast Jurisprudence*, (01), 1–16.
- Yang, L. M. (2023). Development Logic and Construction Path of Digital Intelligence Based on Generative Artificial Intelligence Legal Services. *Journal of Shenzhen University (Humanities & Social Sciences)*, 40(06), 111–120.
- Zhou, H. Y., & Li, Y. Y. (2023). The Impact of ChatGPT on the Educational Ecology and Coping Strategies. *Journal of Xinjiang Normal University (Philosophy and Social Sciences Edition)*, 44(04), 102–112.
- Zhou, L., & Wang, F. (2023). Enlightenment of Generative Artificial Intelligence in Education: Letting Everyone Become Themselves. *China Educational Technology*, (05), 9–14.
- Zhao, X. W., Dai, L., & Shen, S. S., et al. (2024). Designing Educational Prompts to Facilitate High-Consciousness Learning. *Open Education Research*, 30(01), 44–54.
- Zhao, W. X., Zhou, K., & LI, J., et al. (2023). A survey of large language models. Available online: <https://arxiv.org/abs/2303.18223> (accessed on 15 August 2023).
- Zheng, L. Q., Gao, L., & Huang, Z. C. (2024). Can Conversational Robots Based on Generative Artificial Intelligence Technology Improve Online Collaborative Learning Performance? *Research on Electrification Education*, 45(03), 70–76+84.
- Zhuo, T. Y., Huang, Y., Chen, C., & Xing, Z. (2023). Exploring AI Ethics of ChatGPT: A Diagnostic Analysis. Available online: <https://arxiv.org/abs/2301.12867> (accessed on 15 August 2023).
- Zhu, Y. X., & Yang, F. (2023). ChatGPT/Generative Artificial Intelligence and Educational Innovation: Opportunities, Challenges, and the Future. *Journal of East China Normal University (Educational Sciences Edition)*, 41(07), 1–14.
- Zhang, J. W. (2023). Educational Reflection on ChatGPT: The Educational Challenges and Ethical Limits of Otherness Technology. *Research on Electrification Education*, 44(09), 5–11+25.
- Zhang, J. W., & Pan, L. Q. (2021). New Starting Points, New Concepts, and New Solutions for Legal Talent Cultivation in the Era of Artificial Intelligence. *Legal Education Research*, 32(01), 53–73.
- Zhang, Y., Li, Z. F., & Qian, W. (2023). From ChatGPT to Human-Machine Collaboration in Knowledge Co-construction. *Studies in Science of Science*, (12), 2131–2137.
- Zhang, W. X., Shen, T. J., & Sun, X. Y. (2023). From Disorder to Reorder: Changes in Information Order and Governance in the Context of Generative Artificial Intelligence. *Journalism and Communication*, (10), 41–51.
- Zhang, Z. (2023). The Underlying Logic and Possible Paths of ChatGPT/Generative Artificial Intelligence Reshaping Education. *Journal of East China Normal University (Educational Sciences Edition)*, 41(07), 131–142.