

Artificial Intelligence Empowers the Integrated Development of Legal Education: Challenges and Responses¹

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Artificial intelligence is profoundly changing human social life, and the integration between artificial intelligence and law continues to deepen. Artificial intelligence has brought new impetus for legal education from three dimensions: providing new technologies, establishing new models, and shaping new paradigms. At present, it is still at the exploratory stage on how to position the goal of cultivating versatile professionals of “artificial intelligence + law,” how to improve the competence of teachers, and how to integrate the curriculum system. As one of the important contents of the paradigm transformation of “New Liberal Arts” education, legal education must also upgrade the concept of cultivating professionals, make full use of the support of big data, artificial intelligence, and other new technologies, clarify the goal of cultivating versatile professionals who “have the ability of legal thinking + can use artificial intelligence technology,” bolster the ranks of teachers who not only “understand the technology” but also can “foster a new generation of people with sound values and ethics,” and construct the interdisciplinary, integrated AILE theoretical and practical curriculum systems, for the purpose of responding to the development trend of the transformation of liberal arts education in the new era, and providing intellectual support for cultivating professionals to meet the development needs of the country in the new era.

Keywords: artificial intelligence, technological revolution, legal education, talent training, challenge and response

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Introduction

In 2017, the State Council of the People's Republic of China issued the *New Generation Artificial Intelligence Development Plan*, which stated that artificial intelligence has developed rapidly. A set of new features such as deep learning, cross-border integration, human-computer cooperation, group intelligence sharing and free manoeuvre have emerged. The rapid development of artificial intelligence will profoundly change the world and how we live in it. "In 2018, the Ministry of Education of the People's Republic of China issued the Artificial Intelligence Innovation Action Plan for Institutions of Higher Education, proposing to pay increased attention to the cross-integration of professional education for artificial intelligence (AI) with computer and control science, mathematics, statistics, physics, biology, psychology, sociology, law, and other disciplines, and explore a new training model of "AI + X." In November 2020, the National Conference on the Construction of New Liberal Arts was held at Shandong University (Weihai City), which released the Declaration on the Construction of New liberal Arts, and launched the construction of new liberal arts in an all-round way. Director Wu Yan of the Ministry of Education proposed that the new liberal arts should be deeply integrated with modern information technology to promote the learning revolution. The construction of new liberal arts must adhere to the "three basic principles," including keeping to the right path and making innovations, using correct values to lead people's minds, and taking category-based approaches, and focus on "three key drivers," including optimizing the disciplines, improving the quality of the courses, and creating new models. Professor Liu Xiaohong, President of Shanghai University of Political Science and Law, believes that the integration between artificial intelligence and law continues to deepen, and the trend of mutual influence and common development between law and technology is also more obvious. The combination of artificial intelligence and the rule of law activities makes legal information and processes digitalized and Internet-based. Thus, new forms of judicial activities such as smart courts, Internet courts, and mobile micro courts have emerged. The development of legal big data analysis and the emergence of legal robots have enabled legislation, justice, law enforcement and legal services to achieve a certain degree of automation and intelligence" (Liu Xiaohong, 2020). It can be seen that artificial intelligence will play an extremely important role in how to respond to the new demands of the "new liberal arts" for the integration of science and technology in legal education and to promote the reform of the model of cultivating professionals in legal education.

I. How artificial intelligence empowers legal education

"Empowerment" was originally a term in positive psychology, mainly aiming to give other people positive energy by changing their words and deeds, attitudes, and environment. The "artificial intelligence empowered legal education," as mentioned in this paper, refers to that artificial intelligence provides a new method, path and possibility for the integrated development of legal education. Artificial intelligence can be defined in both broader and narrower senses. In the narrower sense, artificial intelligence is a branch of computer science, which refers to the science and technology of using the intelligence simulated or realized by the computer to study how to make machines intelligent. Artificial intelligence refers to a comprehensive discipline that studies and develops theories, methods, technologies, and application systems for simulating, extending, and expanding humans and other animals and developing various machine intelligence and intelligent machines. This paper mainly uses the concept of artificial intelligence at its broader level.

(I) Providing a new technology

The Artificial Intelligence Innovation Action Plan for Institutions of Higher Education proposes that artificial intelligence has characteristics that combine technical and social features, and it is a new driver of economic development and an accelerator of social development. “Big data and artificial intelligence are regarded as the two wheels of pushing for the paradigm shift of humanities and social sciences at the present stage emphasizing the significance of social networks and inter-subjectivity in the revolution of the way of thinking, and taking the measures such as “using technology to check technology” as the realistic countermeasures to the ethical dilemma” (Jia & Ma, 2021: 110). Using artificial intelligence technology can innovate new ways to provide training, revolutionize teaching methods, improve academic administration, and build an intelligent, Internet-based, personalized and lifelong education system, which are important measures for promoting the development of balanced education and educational equity and increasing education quality. In fact, artificial intelligence technology has been widely used in all aspects of higher education and teachings, such as learning management systems, monitoring examinations, grading and evaluation, student information systems, handling official business, library services, enrollment, and mobile applications. In 2018, Carl Benedikt Frey and Michael Osborne, professors of the University of Oxford, published a report, *The Future of Employment: How susceptible are jobs to computerization*. The report indicated that the computerizable probability of legal secretaries is 98%, the computerizable probability of judges is 40%, and the computerizable probability of paralegals and legal assistants is 94%.

(II) Establishing a new model

Human civilization has gone through the transformation from agricultural civilization to industrial civilization, and then to the current ecological civilization and information civilization. Big data, cloud computing, artificial intelligence, blockchain, and other information technology means have put forward new requirements for legal education. Some scholars have proposed that legal education in the era of artificial intelligence should be transformed from a “streamed training model” to a “personalized training model” in order to adapt to the concept of “new liberal arts” and realize the mutual integration of legal education and the development of artificial intelligence. “The so-called personalized training model in the era of artificial intelligence means that legal education should attach importance to the characteristics and ability needs of law students, constantly combine artificial intelligence with legal education, and restructure law discipline and other disciplines from the knowledge level, to adapt to the new requirements of the development of law in the artificial intelligence era. It can be seen that the era of artificial intelligence emphasizes more on the knowledge, creativity and thinking ability of legal professionals” (Peng, 2020: 20). The book *Civilization 2030: The Near Future for Law Firms* also notes that in the future, artificial intelligence and robots will dominate the legal practice, and the legal market will no longer be dominated by legal talents, but by “legal talents + big data.”

(III) Shaping a new paradigm

Making full use of information-based intelligent systems such as artificial intelligence may lead to a relatively reduced number of legal practitioners, which has an important impact on the cultivation of legal talents. Due to the widespread application of legal artificial intelligence technology, the demand for legal practitioners has shown a downward trend, which requires

legal education to cultivate legal professionals who can adapt to the era of artificial intelligence. In the era of artificial intelligence, it is the goal of law students to build themselves into versatile professionals of “law + artificial intelligence.” High-quality legal professionals must have both excellent legal literacy and proficient artificial intelligence application capabilities. “Law students with such versatile talent will be more and more sought after by employers” (Chen, 2020: 86). Most legal practitioners believe that the original business of legal assistants, such as document production, data retrieval and analysis, typical case handling and consultation, and the production of simple position papers or statements of defense, may be replaced by artificial intelligence in the future. Some scholars note that artificial intelligence is endowing legal education with a new educational paradigm, i.e., AILE coupling model (AI represents Artificial Intelligence, L represents to Law, and E represents Education). “As a new education model, AILE coupling model is a paradigm constructed on the basis of the traditional legal education model. It mainly includes four elements: the educational goal of cultivating outstanding legal professionals, the education content focusing on the curriculum construction based on the integrated development of law and artificial intelligence, the systematic education method and the comprehensive evaluation mechanism” (Zou & Li, 2020: 136).

II. Challenges faced by legal professionals training in the era of artificial intelligence

(I) The challenge of unclear positioning of the goal of cultivating professionals

Although the New Generation Artificial Intelligence Development Plan clearly proposes to cultivate versatile professionals of “artificial intelligence + law,” there is still a general lag in legal education in colleges and universities, which is mainly reflected in the training goals, training programs, curriculum systems, teachers and other aspects. “In terms of training goals, almost all law schools and departments in domestic universities maintain the previous overall training goals and have not made necessary adjustments in the era of artificial intelligence, lagging far behind the pace of the development of science and technology in the era” (Zhao, 2020: 153). The Southwest University of Political Science and Law and the Shanghai University of Political Science and Law took the lead in establishing the school of artificial intelligence and law, and carried out a useful attempt to cultivate versatile professionals of “artificial intelligence + law.” The Shanghai University of Political Science and Law proposed to cultivate professionals with applicable expertise and versatile talent in artificial intelligence and law. It has positioned two school-running goals: The first is to cultivate artificial intelligence legal professionals. That is to cultivate the professional who can meet the legal needs of the artificial intelligence era, including those who provide legal services for the legislation, law enforcement, judicial and law-abiding needs of artificial intelligence. The second is to cultivate legal artificial intelligence professionals. That is to cultivate the artificial intelligence professionals with applicable law expertise, including those who can apply artificial intelligence in legislation, law enforcement, justice and law-abiding. However, it is still at the exploratory stage on how to cultivate professionals of “artificial intelligence + law,” how to position the goal of cultivating professionals, and how to integrate relevant curriculum systems. Therefore, even though the Ministry of Education has issued the policy on cultivating versatile professionals of “artificial intelligence + law,” the issues like the following ones still need to be further explored and detailed: How to implement the policy? How can versatile professionals acquire the knowledge and skills

of law and artificial intelligence? To what extent should the legal professionals cultivated acquire proficiency in the knowledge of big data and artificial intelligence?

(II) The challenge of insufficient development of a contingent of teachers strong in both law and artificial intelligence

At present, traditional legal education teachers are still unable to meet the needs of cultivating versatile professionals of “artificial intelligence + law.” Excellent university education cannot be achieved without excellent university teachers, and versatile professionals of “artificial intelligence + law” cannot be cultivated without a contingent of excellent teachers. However, as a new interdisciplinary subject, “artificial intelligence + law” involves many issues that the artificial intelligence discipline has not addressed, and the consequential deep legal reform is an exploration process without a preset blueprint and results, resulting in an obvious shortage of professionals strong in both law and artificial intelligence. The shortage of teachers is mainly reflected in two aspects: The first is that the existing law teachers lack artificial intelligence-related professional knowledge, and the absolute number of legal teachers with artificial intelligence-related professional knowledge is insufficient. The second is that the income of a law teacher is far lower than that of an artificial intelligence professional of the enterprise. Therefore, it is difficult to attract high-end artificial intelligence professionals to join the legal education sector. There is an inflow of artificial intelligence talents to the enterprises, and legal education is facing the dilemma of the brain drain of artificial intelligence professionals. There are many difficulties in cultivating versatile professionals of “artificial intelligence + law,” especially the lack of teachers strong in both law and artificial intelligence. We believe that the prerequisite for cultivating versatile professionals of “artificial intelligence + law” is to have interdisciplinary teachers strong in both law and artificial intelligence.

1. Having acquired proficiency in law: Having legal thinking and legal application ability. “Having acquired proficiency in law” requires that the versatile professionals of “artificial intelligence + law” shall first have legal thinking ability and legal application ability. “In the era of artificial intelligence, legal education shall keep up with the pace of the development of science and technology, actively develop legal education theories and methods under the new situation, and cultivate legal talents from the perspective of the combination of law and technology. Legal education shall cultivate students’ legal application ability, big data thinking ability, and computational thinking ability to respond to the new requirements for legal professionals in the artificial intelligence era” (Zhao, 2020: 155). In the era of artificial intelligence, legal issues brought about by technology will emerge one after another. Legal professionals must have superb comprehensive legal capabilities so that they can use legal concepts and legal rules, and comprehensively consider multiple factors such as social conditions, value judgments, and moral customs, and solve new problems such as the subject qualification of artificial intelligence, intellectual property rights, and infringement liability. This also puts forward higher requirements for the teachers who are responsible for cultivating versatile professionals of “artificial intelligence + law.” The main manifestations are as follows: First, a teacher must have acquired proficiency in basic legal concepts and legal rules. An accurate understanding and interpretation of legal concepts and legal rules is the basis for legal thinking. Second, a teacher must master the current legal knowledge system framework. Third, a teacher must be able to analyze case facts, grasp legal relationships, make legal interpretations, and apply legal rules. Using legal reasoning and following legal logic

can solve practical problems. Fourth, a teacher must be able to make value measurements, and rationally judge legal rules.

2. *Understanding the technology: Analyze and apply artificial intelligence technology.* “Understand the technology” requires that the versatile professionals of “artificial intelligence + law” shall have the ability to apply artificial intelligence technology. This is mainly reflected in the following two aspects: The first is to use artificial intelligence technology to facilitate the construction of intelligent learning environments, which are conducive to solving difficult problems in a legal learning problem. Emerging technologies facilitate the construction of intelligent learning environments, which are integrated with digital classrooms, teaching aids, equipment, learning resources, and communication communities, etc. The exploration of teaching rules through the acquisition and analysis of multimodal data promotes the transformation of educational scientific research from traditional empiricism to data-driven evidence-based research. In addition, for the current legal education practical training courses, artificial intelligence technology can also be fully utilized to assist teaching. “In the teaching of practical training courses, the teacher can use artificial intelligence technology to build a robot teaching system with cloud computing and complete the AR+VR fusion, real-time interaction and 3D tracking of scene cases. Thus, with artificial intelligence technology, the students can clearly understand theoretical knowledge, establish legal thinking, and develop vocational skills” (Zuo & Li, 2019: 16). The second is to apply artificial intelligence technology to facilitate legal practice teaching. The main manifestation is that after the teacher provides the students with certain basic education in artificial intelligence and big data technology, the students can use artificial intelligence technology as the basic tool to proficiently use legal interpretation, value weighing, legal argumentation and other methods to solve the difficult problems of applying the law brought about by various new technologies in the information age. Firstly, according to the needs, the relevant legal issues shall be analyzed, and the mathematical model of the corresponding legal issues shall be established. Based on this mathematical model, the appropriate development tools and programming languages shall be selected, and the complete and orderly instructions shall be designed to solve the legal problem in the way that the computer solves the problem. In this way, the algorithms are used to realize programming, and the programming is applied to the practice of the legal problem, which brings convenience to the legal practice. Secondly, the algorithm model can be used to analyze the massive data generated by laws and regulations, judicial judgment documents, administrative law enforcement documents, enterprise registration information, etc., and the information can be processed, collated and analyzed to obtain the internal logical relationship between events, thus fully grasping the big data panorama. On these grounds, legislators can formulate more scientific legal norms; judges can conduct a more in-depth analysis of cases; and law enforcement officials can formulate more precise risk prevention and control plans.

(III) The challenge of the lack of interdisciplinary integrated curriculum systems of “artificial intelligence + law.”

At present, legal education has formed a legal education system with undergraduate legal education as the starting point and foundation, and with diversified postgraduate education, but there is still a lack of interdisciplinary integrated curriculum systems of “artificial intelligence + law” in the legal education system and in the model of cultivating professionals. Most of the traditional law curriculum systems do not involve artificial intelligence-related courses such as big data and blockchain, and the field of artificial intelligence does not have

a deep enough involvement in the law. Hence, the two fields simply go in their own ways. “At present, courses such as Fundamentals of Python Language Programming and Python Data Analysis and Application are generally offered in all programs, including in the law program, so that the students can master basic data analysis and processing ability. However, for the cultivation of law students, it is still unclear what the specific goals of such courses are, how to teach these courses, and how to combine them with other law courses, so the teaching effect is extremely limited, and they are even considered by the students as a burden. Therefore, in the future, for the purpose of improving the effectiveness of such courses, the teachers should continue to explore how to closely integrate them with the specialty of law to achieve a high degree of integration of artificial intelligence and law, instead of just using them as instrumental courses or commonly required courses” (Zhao, 2020: 156). Obviously, if the legal education cannot be integrated with the overall design and planning of artificial intelligence, it will be difficult to align the curriculum knowledge system between law and artificial intelligence, and in the field of artificial intelligence, it will be difficult to develop intelligent service products to meet the needs of the legal industry.

III. Responses of legal education in the context of the artificial intelligence era

In the era of artificial intelligence, there are a series of problems in the cultivation of versatile professionals of “artificial intelligence + law,” such as the unclear positioning of the goal of cultivating professionals, the inadequacy of teachers strong in both law and artificial intelligence, and the lack of interdisciplinary integrated curriculum systems of “artificial intelligence + law.” In response to the above problems, we make three recommendations for improvement: The first is to clarify the abilities that versatile professionals need to have according to social needs and to set the goal of cultivating professionals that fits the orientation of “artificial intelligence + law.” The second is to train law teachers to improve their artificial intelligence skills and strengthen the workforce of teachers strong in artificial intelligence in legal education, and at the same time integrate artificial intelligence technology into legal education, freeing teachers from tedious technical work. The third is to construct the interdisciplinary integrated AILE theoretical and practical curriculum systems.

(1) Set the goal of cultivating professionals that fits the orientation of “artificial intelligence + law.”

Artificial intelligence technology has a wide range of applicability, which can be used in all aspects of the legal field, bringing great convenience to the society. This requires legal education to cultivate versatile professionals who not only have the ability of legal thinking and legal application, but also have the ability to analyze and use artificial intelligence technology, so that they can adapt to the demands of the new era. Legal education shall clarify the abilities that versatile professionals need to have according to social needs, and based on this, set a scientific goal of cultivating versatile professionals of “artificial intelligence + law.” Otherwise, there could be a “disconnection” between legal professionals who only ask questions and computer professionals who only design artificial intelligence products. Law is a highly specialized discipline. A computer professional without receiving legal education is unable to correctly express legal issues and understand legal norms, resulting in the inability to deal with difficult and complex legal issues, while a legal

professional who does not understand or only has a low-level understanding of artificial intelligence technology cannot use artificial intelligence technology to establish artificial intelligence model which not only conforms to the interpretation of legal provisions, but also can stand the test of legal empirical analysis to resolve practical legal issues. The integration of artificial intelligence technology into legal education can make legal education present the characteristics of intelligence, person-machine collaboration, teaching automation, personalization, and interdisciplinary integration. Big data technology can quantify, analyze and model the learning behaviors and learning processes of students, use statistics, machine learning, data mining and other methods to analyze all the data generated in the process of teaching and learning, and recommend personalized learning resources for them, thus optimizing the learning processes and learning environments of law students, and achieving the personalized development of legal education. Robotics can play the role of a tutor, teaching the conceptual, memorable, repetitive, and simple narrative content of legal knowledge and artificial intelligence technology knowledge. Using artificial intelligence technology, legal education can cover online and offline classes and the learning before, during, and after the class. Students can easily access relevant learning materials anytime and anywhere by turning on their computers or mobile phones, which makes learning more convenient. With the support of artificial intelligence technology, the cultivation of versatile professionals of “artificial intelligence + law” will be greatly accelerated.

(II) Distinguish the “way” and “instrument” for bolstering the ranks of teachers strong in both law and artificial intelligence

Great importance shall be attached to distinguishing the “way” and “instrument” for bolstering the ranks of teachers strong in both law and artificial intelligence. As an ancient saying goes, “What is above forms refers to the way [Tao道]; what is below forms refers to the instrument [Qi器].”

The core of the so-called “way” for bolstering the ranks of teachers is to “foster a new generation of people with sound values and ethics.” “Artificial intelligence + education” is not equal to the simple application of intelligent technology in education. Artificial intelligence should be regarded as the endogenous variable of the overall reform of education to promote the transformation from industry-oriented education to intelligent education. As person-machine co-teaching becomes normal in education, the role of teachers will change dramatically. Knowledge-based teaching is mostly undertaken by artificial intelligence, while teachers are mainly responsible for learning design, supervision, encouragement, companionship and emotional communication with students. In the future, artificial intelligence will focus on teaching, while teachers will focus on cultivating the integrity of students. Chinese President Xi Jinping stressed, “Virtue makes a decent man. The foundation of cultivating the integrity of students is to promote their code of ethical conduct. This is the dialectics of talent training. Running a school must respect this law. Otherwise, the school will not run well.” Therefore, the primary task of the teachers strong in both law and artificial intelligence is to cultivate the integrity of students. Artificial intelligence technology is only an auxiliary technology that better achieves the purpose of cultivating the integrity of students, but it cannot replace the teacher’s function of cultivating the integrity of students. “The goal of higher education is to develop talented personnel with moral cultivation and critical thinking, which actually points to the core value level of higher education. The scope of artificial intelligence in higher education is not unlimited. When artificial intelligence works in the field of higher education,

it cannot invade the core value of higher education, let alone hinder the realization of the goal of higher education” (Quan, 2021: 68).

The core of the so-called “instrument” for bolstering the ranks of teachers is to “understand the technology.” With the development of a new generation of artificial intelligence technology, many legal issues have emerged that need to be resolved urgently. How can law and artificial intelligence reinforce each other and develop in a coordinated manner is an important research field rising at home and abroad. In the era of artificial intelligence, it is necessary to improve teachers’ technical competence through such measures as artificial intelligence skills training for law teachers, thereby promoting the effective connection between teachers’ competencies and their work in cultivating versatile professionals of “artificial intelligence + law.” Using artificial intelligence technology can free teachers from tedious work so that they can efficiently complete teaching work with high quality. The era of artificial intelligence puts forward higher requirements for law teachers’ competencies, which requires teachers to play their subjective initiatives and transform from “the role of knowledge indoctrinator” to “the role of quality inspirer.” The authors of this paper believe that in the context of artificial intelligence, law teachers should learn to manage artificial intelligence resources and use artificial intelligence technology, and based on this, analyze and evaluate students’ learning effects, cultivate their logical thinking and rational judgment ability, motivate them to learn various kinds of professional knowledge, and improve their legal practice skills.

It should be noted that the roles and positions, educational concepts, and educational methods of teachers will change due to the development of artificial intelligence technology, but their mission of cultivating the integrity of students will remain unchanged, that is: in legal education, the law teachers shall help students to grow and flourish, and cultivate their core qualities, so that the students can establish the professionalism of resolutely defending fairness and justice and the rule of law, and strictly observe professional ethics and remain clean and honest. Although artificial intelligence is revolutionizing education, the essence of education remains unchanged, and the fundamental purpose of promoting a code of ethical conduct, setting up role models and cultivating talent will not change. Under the impact of artificial intelligence technology, higher education in law shall believe in the law and uphold the rule of law, and cultivate legal professionals strong in both moral integrity and law competence. Therefore, artificial intelligence technology is always only a means of education, not the purpose of education. To promote a code of ethical conduct, to set up role models, and to cultivate talent are the fundamental attributes of legal education.

(III) Construct the interdisciplinary integrated AILE theoretical and practical curriculum systems

The standards for cultivating professionals shall be defined according to social needs, and the curriculum systems for cultivating professionals should be constructed in line with the orientation of “artificial intelligence + law.” “In the context of the gradual maturity of artificial intelligence technology, future legal professional activities will be carried out in the way of person-machine collaboration, and legal practitioners will increasingly use legal artificial intelligence technology. Therefore, on the one hand, legal education shall provide students with courses that introduce basic knowledge of computer algorithms and legal artificial intelligence technology; on the other hand, legal education shall focus on students’ legal knowledge learning and appropriately expand practical courses” (Zhao, 2020; Peng, 2020: 75). Therefore, some scholars have proposed that in the AILE coupling model, for the interdisciplinary integration

of law and artificial intelligence, two major categories of courses should be arranged on the basis of the original law courses, including the interdisciplinary integrated theoretical and application-oriented curriculum systems of law and artificial intelligence.

The first category is the interdisciplinary theoretical courses that integrate law and artificial intelligence. The theoretical curriculum system is the curriculum system designed mainly based on the basic knowledge of artificial intelligence and the perspective of the integration of artificial intelligence and departmental laws, which specifically include the following new courses: the historical origin of law and artificial intelligence, the basic principles and theories of law and artificial intelligence, legal information retrieval, information extraction and text processing, legal regulation of artificial intelligence, application of artificial intelligence law, artificial intelligence and philosophy, artificial intelligence and civil and commercial law, artificial intelligence and criminal law, and artificial intelligence and intellectual property law. "Such courses can build a complete knowledge framework for the in-depth interdisciplinary integration of law and artificial intelligence, eliminate the disciplinary barrier between law and artificial intelligence, and stimulate the enthusiasm of law students to actively study the subjects related to artificial intelligence" (Zou & Li, 2020: 138). It should be noted that the establishment of a theoretical curriculum system that integrates law and artificial intelligence requires full consideration of law students' actual conditions and the supporting role of the curriculum system for cultivating professionals. At present, the supporting role of the law and artificial intelligence-related theoretical courses by relevant colleges and universities for the graduation requirements of law students remains to be evaluated. "From the practice of some law schools that attach importance to artificial intelligence + law, elective courses, summer camps, video courses and academic lectures are their main forms of exploration in discipline-based law and artificial intelligence. However, how such courses can really help students update their knowledge structure and master the law concerning the development of law and artificial intelligence remains to be evaluated. If the courses of law + artificial intelligence are set only in form, it is just the same old stuff with a new label, like old wine in a new bottle. The relevant courses lack substantive content. For students, there is no essential difference between taking this so-called law + artificial intelligence course or studying the so-called artificial intelligence + law specialty and studying other departmental laws. In October 2019, the Ministry of Education clearly stated that the design and planning of the undergraduate education curriculum system should be based on social development needs and attached importance to the systematic and holistic nature of curriculum construction. Engineering education professional certification also requires that there should be a clear mapping relationship between the graduation requirement index points (capability structure) and the curriculum system structure, and each capability in the graduation requirement index points must be supported by a clear course. Therefore, based on the idea of outcomes-based education (OBE) of professional certification, the setting of professional characteristic courses shall form a scientific matrix relationship with the graduation requirements index points. "In the OBE education system, a matrix relationship between the curriculum system and the graduation requirements index points shall be established to provide a basis for reorganizing and optimizing the curriculum teaching content. Through the corresponding relationship, some repetitive courses can be eliminated, the courses that cannot support the index points can be eliminated, and the courses with professional characteristics can be opened. In the curriculum setting, the points of knowledge and capabilities shall be gradually increased as far as possible. We believe that for the establishment of a theoretical curriculum system that integrates law and

artificial intelligence, it is necessary to comprehensively consider relevant requirements such as the goal of cultivating professionals, graduation requirements, and professional certification, and make a timely assessment on the scientific nature of the course.

The second category is the interdisciplinary application-oriented curriculum system that integrates law and artificial intelligence. In terms of the setting, the application-oriented curriculum system may specifically include modeling law and artificial intelligence, the big data extraction technology of law, application of intelligent legal service system, artificial intelligence judicial assistance operations, and other experimental and practical training courses. The setting of the practical teaching courses shall give priority to the experimental and practical training sessions of the operation of the artificial intelligence judicial assistant system, so that students can develop a deeper understanding of the function, structure, principle and operation of the artificial intelligence judicial assistant system, enhance their adaptability to the use of the artificial intelligence judicial assistant system, and overcome blind exclusion or psychological dependence on artificial intelligence. Some foreign scholars have proposed a syllabus of artificial intelligence + law, which specifically includes the courses on legal norms, legal reasoning, legal argumentation and legal digital document technology. The seminar on artificial intelligence and law not only teaches students valuable courses on legal norms, cases, and arguments, but also introduces them to the models and algorithms for dealing with legal practice in the digital age. The artificial intelligence, legal models and text processing of legal reasoning add value to real-world applications, including electronic mining, visualized legal argumentation, predicting results, making resolution decisions, and legal experts. Such courses focus on the in-depth advancement of artificial intelligence in the legal field, aiming at the professional practice ability requirements for the cultivation of outstanding legal professionals.

Conclusions

In order to support Guangdong to become “a forerunner of the country” in the new journey toward fully building a modern socialist China and enhancing the quality of cultivating professionals, Guangdong Province has proposed, “Guangdong Province will, based on the perspective of big liberal arts, promote the cross-disciplinary integration of humanities and social sciences with a new round of scientific and technological revolutions and industrial transformations, and actively cultivate liberal arts talents in the new era.” What is the “new” of the new liberal arts? How to respond to the demand of the “new era” for legal professionals? These are undoubtedly issues that we need to think about seriously. However, “new liberal arts” cannot avoid the inherent influence of new technologies such as big data, cloud computing and artificial intelligence on the paradigm shift of humanities and social sciences. “New liberal arts is a new form of production and reproduction of liberal arts knowledge based on highly integrated, information-based and digital knowledge in the post-industrial era. It is the new model and means of the discipline of liberal arts knowledge. It is worth noting that the new liberal arts are not simply a cross between arts and sciences, between arts and engineering, or between arts and medicine, but a demand-oriented interdisciplinary development framework aiming for the frontiers of science and technology and national strategies” (Quan, 2021: 290). As one of the important contents of the paradigm transformation of new liberal arts education, legal education must also upgrade the concept on cultivating professionals, make full use of the support of big data, artificial intelligence, and other new technologies, clarify the goal of cultivating versatile professionals who “have the ability of legal thinking + can use

artificial intelligence technology,” bolster the ranks of teachers who not only “understand the technology,” but also can “foster a new generation of people with sound values and ethics,” and construct the interdisciplinary integrated AILE theoretical and practical curriculum systems, for the purpose of responding to the high-quality development trend of the transformation of liberal arts education, and cultivating professionals to meet the development needs of the country in the new era.

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