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THE USE OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES TO ENHANCE THE QUALITY OF HIGHER LEGAL EDUCATION

In the independent Republic of Kazakhstan, higher legal education is currently in a developmental stage and requires significant quality enhancement. This scientific article proposes the introduction of artificial intelligence (AI) technologies, leveraging both national and international legal norms to expedite this implementation. The challenge of integrating AI into the educational process is not merely a domestic issue but one of global significance. Law faculties worldwide, irrespective of their prominence, should incorporate AI technologies into the teaching of all legal disciplines, given AI's almost limitless potential. The authors of this article, focusing on the law faculties of universities in the Republic of Kazakhstan and their academic subjects, seek to present their scholarly perspective on the specific application of various AI tools in teaching several legal disciplines. Through their analysis, the authors recommend the development and enactment of new Kazakh laws, by-laws, and international conventions to incorporate AI mechanisms in all sectors of society, including higher education, to improve the quality of higher legal education in the country. The proposed international conventions advocate for the use of AI for the benefit of the global community and individual states while also establishing norms to mitigate risks and develop methods to thwart hostile hacker actions that could compromise international security. This topic is being examined for the first time within Kazakh science, and its approaches may interest law faculties in other countries.

Keywords: artificial intelligence, Kazakh legal norms, international legal norms, quality of education, implementation of AI, neural networks, convention, law.

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Жоғары құқықтық білім сапасын арттыру үшін жасанды интеллект технологияларын қолдану

Тәуелсіз Қазақстан Республикасында жоғары заңгерлік білім қазіргі уақытта даму сатысында және сапаны айтарлықтай арттыруды қажет етеді. Бұл ғылыми мақалада осы үдерісті жеделдету үшін ұлттық және халықаралық құқықтық нормаларды пайдалана отырып, жасанды интеллект (ЖИ) технологияларын енгізу ұсынылады. Білім беру процесіне ЖИ-ді енгізу мәселесі тек ішкі мәселе ғана емес, жаһандық маңызы бар мәселе. Әлемдегі заң факультеттері, олардың беделіне қарамастан, ЖИ-дің шексіз мүмкіндіктерін ескере отырып, барлық заң пәндерін оқытуға ЖИ технологияларын енгізуі керек. Мақала авторлары Қазақстан Республикасы университеттерінің заң факультеттері мен олардың оқу пәндеріне назар аудара отырып, бірнеше заң пәндерін оқытуда әртүрлі ЖИ құралдарын нақты қолдану туралы өздерінің ғылыми көзқарастарын ұсынуға тырысады. Талдау арқылы авторлар елдегі жоғары заңгерлік білім сапасын арттыру үшін қоғамның барлық секторларына, соның ішінде жоғары білім беруге ЖИ тетіктерін енгізу үшін жаңа қазақстандық заңдарды, заңға тәуелді актілерді және халықаралық конвенцияларды әзірлеуді және қабылдауды ұсынады. Ұсынылған халықаралық конвенциялар ЖИ-ді жаһандық қоғамдастық пен жеке мемлекеттердің игілігі үшін пайдалануды қолдайды, сонымен қатар тәуекелдерді азайту және халықаралық қауіпсіздікке қауіп төндіруі мүмкін қаскүнемдік хакерлік әрекеттерге қарсы тұру әдістерін әзірлеу үшін нормалар белгілейді. Бұл тақырып қазақстандық ғылымда алғаш рет қарастырылып отыр және оның тәсілдері басқа елдердің заң факультеттері үшін қызықты болуы мүмкін.

Түйін сөздер: жасанды интеллект, қазақстандық құқықтық нормалар, халықаралық құқықтық нормалар, білім сапасы, ЖИ енгізу, нейрондық желілер, конвенция, заң.

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Использование технологий искусственного интеллекта для повышения качества высшего юридического образования

В Республике Казахстан высшее юридическое образование в настоящее время находится на стадии развития и требует значительного повышения качества. В данной научной статье предлагается внедрение технологий искусственного интеллекта (ИИ) с использованием национальных и международных правовых норм для ускорения этого процесса. Проблема интеграции ИИ в образовательный процесс является не просто внутренней проблемой, а проблемой глобального значения. Юридические факультеты во всем мире, независимо от их престижа, должны внедрять технологии ИИ в преподавание всех юридических дисциплин, учитывая практически безграничные возможности ИИ. Авторы данной статьи, фокусируясь на юридических факультетах университетов Республики Казахстан и их учебных дисциплинах, стремятся представить свой научный взгляд на конкретное применение различных инструментов ИИ в преподавании нескольких юридических дисциплин. В ходе анализа авторы рекомендуют разработку и принятие новых казахстанских законов, подзаконных актов и международных конвенций для внедрения механизмов ИИ во все секторы общества, включая высшее образование, для повышения качества высшего юридического образования в стране. Предлагаемые международные конвенции выступают за использование ИИ на благо мирового сообщества и отдельных государств, а также устанавливают нормы для снижения рисков и разработки методов противодействия враждебным хакерским действиям, которые могут поставить под угрозу международную безопасность. Эта тема рассматривается впервые в казахстанской науке, и ее подходы могут заинтересовать юридические факультеты других стран.

Ключевые слова: искусственный интеллект, казахстанские правовые нормы, международные правовые нормы, качество образования, внедрение ИИ, нейронные сети, конвенция, закон.

Introduction

The content of legal scientific disciplines is currently studied by more than 45,000 students in about 70 law faculties of universities and law schools in Kazakhstan. Upon graduation, these students will join the ranks of investigators, prosecutors, judges, bailiffs, lawyers, legal advisers, notaries, legal scholars, and teachers of legal disciplines. Most will work in law enforcement, judicial, and executive bodies, enterprises, and law schools in Kazakhstan. Some will work in international justice as international lawyers. They bear considerable responsibility for maintaining domestic and international law and order. Therefore, it is essential to ensure high-quality training for future workers in these fields. Training highly qualified legal specialists is achieved through various methods and means. One such method of ensuring high-quality higher legal education at present is the use of the latest artificial intelligence (AI) technologies in the educational process of legal higher educational institutions in the republic.

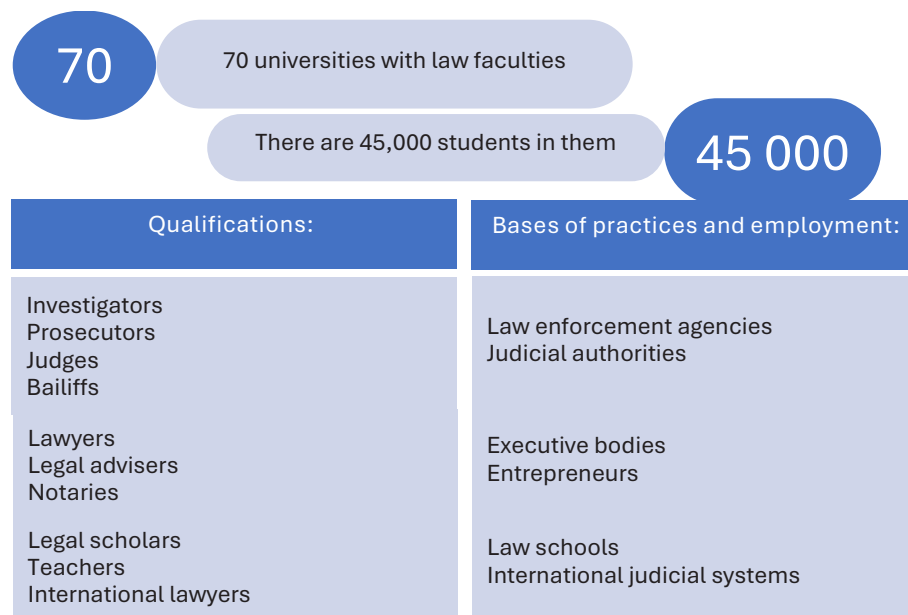
In this regard, it is necessary to define the concepts of “artificial intelligence”, “artificial intelligence technologies”, and “neural networks”. Arti-

ficial intelligence is a computer system’s ability to simulate human mental functions through learning and problem-solving. Mathematical functions and logic allow computers to learn from presented data and make appropriate decisions, simulating human thinking processes. Artificial intelligence technologies encompass computer vision, natural language processing, speech recognition, and speech synthesis. Neural networks consist of interconnected nodes that process and exchange information. Law students gain knowledge on artificial intelligence’s theoretical aspects through lectures by visiting professors from the Information Technology Faculty, typically from the same university.

Kazakhstan is intensively introducing artificial intelligence technologies into the educational process of most universities, including law faculties. An artificial intelligence specialist from the Information Technology Faculty can assist law professors in mastering knowledge and obtaining practical skills on technical and legal issues related to artificial intelligence. By incorporating artificial intelligence neural networks into legal education, we invest in another crucial element of a future lawyer’s professional growth.

Scheme 1

Number of universities, students, qualifications, practice bases and employment



Materials and methods

To ensure the quality of Kazakhstan’s higher education system, including its higher legal education, certain methods are needed. In order for these methods to work in the educational process of law faculties of universities and universities of the republic, it is necessary to determine the appropriate organizational and legal approaches. In order to study the relevant norms of Kazakh, foreign and international law, it is necessary to use research methods. We, the authors of this article, used the following methods. Among the research methods we include the method of interdisciplinary study of artificial intelligence (from the point of view of information technology science, mathematical sci-

ence, legal science, pedagogical science) at seminars, scientific conferences, lectures and the use of knowledge and data in the process of writing an article. We use the method of comparative legal analysis based on the fact that developed countries have more experience in using artificial intelligence and its legislative regulation, which allows Kazakhstan to adopt this experience. In addition, the authors of this article use the method of scientific and legal forecasting: they offer recommendations for the development and adoption of new Kazakh laws and regulations, draft international conventions that would really contribute to the introduction of artificial intelligence in higher education, including legal education, to dramatically improve the quality of highly qualified specialists.

Scheme 2

Research methods



Literary review

US scientists S. Campbell (2024), E. Whitefield (2023) have published books in which they analyzed the basics of artificial intelligence, generative models of artificial intelligence. The Swiss author O. Theobald (2023) in his book reveals the concepts and principles of artificial intelligence, shows what tomorrow will be like thanks to this technology. It is clear from the works of these and other Western authors that their countries were the first to invent and implement artificial intelligence mechanisms.

Russia is striving to contribute to the scientific development of artificial intelligence. This statement follows from the content of the monographs by A.B. Barsky (2024) and N.N. Kosarenko (2024), which link artificial intelligence with intelligent control systems and which provide not only theoretical and legal characteristics of artificial intelligence, but also show the prospects for the development of this latest technology. It would be advisable to cite scientific articles by M. Gulieva (2022), as well as E.N. Melnikova (Melnikova, 2022), who professionally combine artificial intelligence with the legislation of foreign countries. Of particular interest are scientific articles in which the authors explore the use of artificial intelligence in higher education. Thus, P.V. Sysoev (2023) quite professionally outlines the practice of using artificial intelligence technologies by university teachers in their professional activities, and A.V. Rezaev (2023) wonders what the future will be when teaching, using ChatGPT and artificial intelligence at universities.

There are practically no scientific works on the topic of artificial intelligence in the Republic of Kazakhstan: there are only some judgments about some development of artificial intelligence in the republic. The authors R. Bigari (2024) and R. Syzdykov in their online materials talk about how artificial intelligence will change Kazakhstan and what factors will allow the development of artificial intelligence in Kazakhstan in a given direction. K.Nygmet (2023) provides interesting material on the possibility of artificial intelligence taking part in the development of Kazakh legislation in the future.

The given literature review allows us to assert that the article written by the authors on the topic “On the analysis of specialized Kazakh and international legal norms on the use of artificial intelligence technologies to improve the quality of higher legal education” has not been published in these and other countries, as well as in Kazakhstan. This article is published for the first time in the science of Kazakhstan.

Discussion

The emergence of information and communication technologies leads to significant changes in many areas, including the field of education, including its component in the form of higher legal education. The transition to a new quality, to digital technologies is called a revolution. This allows not only to disseminate information, but also to improve the interaction and mutual communication skills of teachers and students, which will lead to an increase in interactive learning of students in the field of legal education (Ahmadshah, 2023: p. 281-282).

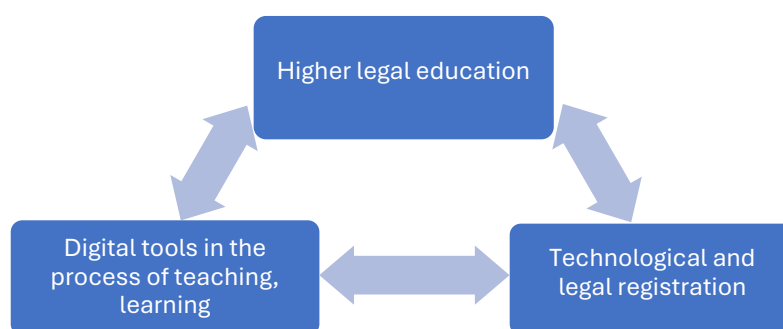
Today, the latest digital technologies are invading all areas of our lives, so we believe that the field of higher education, including legal education, should receive technological and legal registration. This means that digital tools should enter the pedagogy of higher legal education in order to improve the processes of teaching, learning, and cognition. Having experienced digital learning technologies at the university, students will bring the latest digital technologies, use them in all areas of work in those law enforcement and judicial institutions where they will find a job after graduating from a specialized university (Salvador, 2024).

The Ministry of Science and Higher Education of the Republic of Kazakhstan should adopt a strategic document, the main idea of which would be the introduction of digital technologies, artificial intelligence in the field of higher education, including legal education (Goraga, 2024). It should contribute to the transformation of the digitalization of higher education. Here it makes sense to turn to the experience of China, which is implementing the digital transformation of education and considers it the core of the entire education system. In this regard, the leadership of this country believes that digital literacy of teachers is an extremely important factor in the implementation of digital transformation in this area. Mastering the skills and management skills of digital technologies in the educational field by teachers of law faculties and universities of Kazakhstan will allow students, undergraduates, doctoral students to develop the ability to comprehensively obtain and use knowledge and skills in the study of various academic disciplines. This will assist them in the proper use of knowledge in these academic subjects in their practical activities in law enforcement agencies and judicial institutions. To do this, the Faculty of Law should have permanent courses to improve the skills of faculty teachers in digital transformation, the introduction of artificial intelli-

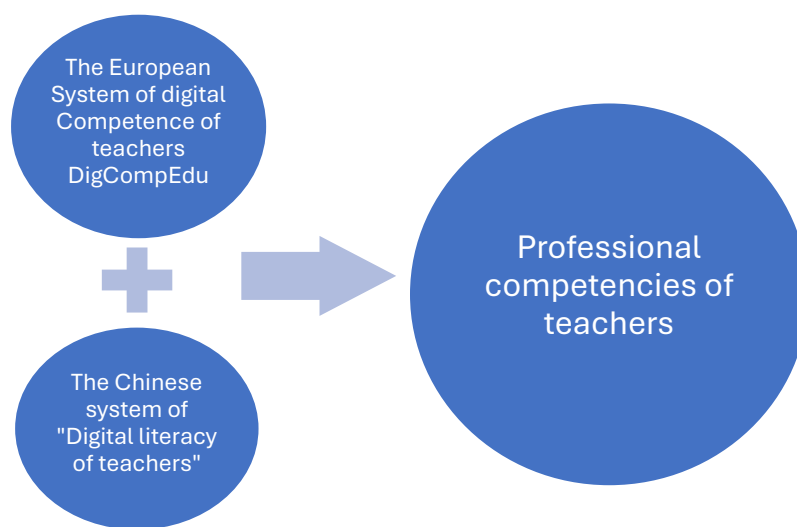
gence technologies, robotics in the learning process. It is necessary to make a legally binding decision on the impossibility of admission of faculty teachers to teaching in the absence of a diploma (certificate) on completion of these courses. On the scale of the faculty and the university, it is advisable to conduct competitive classes for teachers on the best skills in

using digital technologies with the identification and encouragement of winners. The system of improving the competence of teachers can and should be improved based on the study of the European system of digital competence of teachers (Digital Competence Framework for Educators (DigCompEdu)), the Chinese system of “Digital literacy of teachers”.

Scheme 3
Prospects for the development of higher legal education

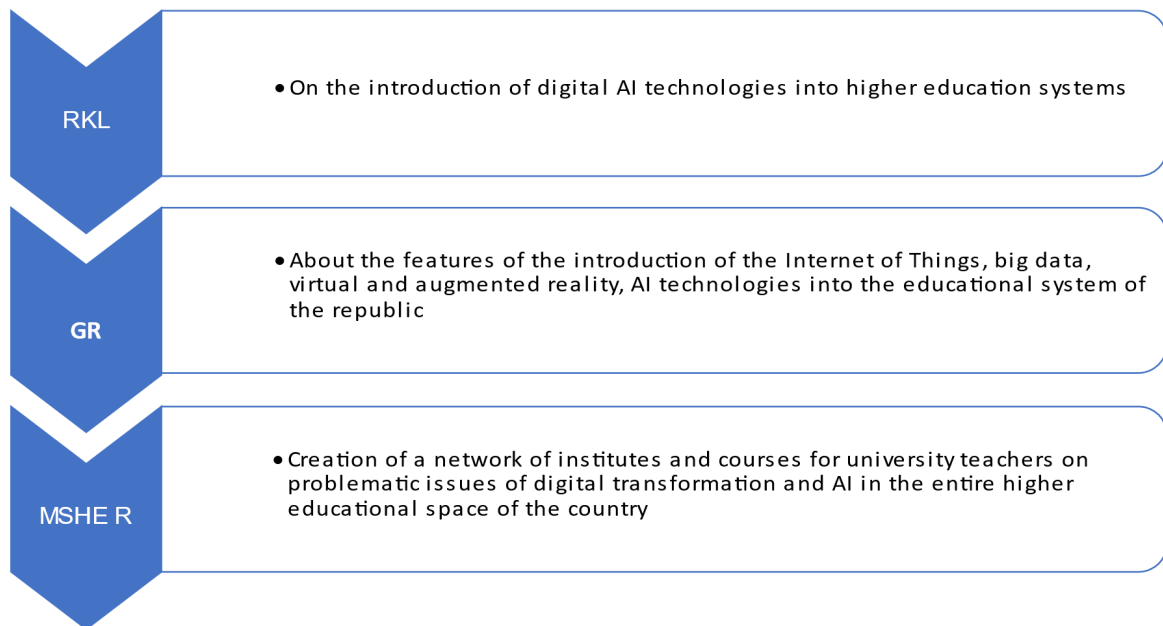


Scheme 4
Teacher competence improvement system



To help the activities of the Ministry of Science and Higher Education of the Republic, it would be desirable to develop and adopt a new Kazakh law “*On the introduction of digital technologies, artificial intelligence into the higher education system*”. At the level of the Government of the Republic of Kazakhstan, it would be possible to adopt a resolution “*On the specifics of the introduction of the Internet of Things, big data, virtual and augmented*

reality, artificial intelligence technologies into the educational system of the republic”. Through the Ministry of Science and Higher Education, it would be advisable to develop and adopt a legal act – a regulatory order to create a network of institutes and courses for teachers of higher education institutions on problematic issues of digital transformation and artificial intelligence in the entire higher educational space of the country.

Scheme 5*Proposals on regulatory support for the use of AI in the educational process*

The introduction of digital transformation in the field of higher legal education is directly dependent on the increased digital competence of STEM teachers (science, technology, engineering, mathematics). This area is an educational policy (curriculum) that combines, combines classes in natural sciences, technology, engineering and mathematics. In the process of studying, teachers of the Faculty of Law need to be given not only theoretical knowledge on digitalization and artificial intelligence, but also to conduct intensive trainings on developing skills in the practical application of these technologies (Zhe-lyazkova, 2024: p. 22, 28). Each teacher, taking into account the specifics of their academic legal discipline, should clearly understand the trends in the use of digital tools in STEM education and, on this basis, draw up a practical plan for their application point by point. A law faculty teacher is required to participate in practical projects, enrich his personal STEM experience, consistently deepen his understanding of digital education, improve his operational skills, and certainly participate in the application of digital tools in the practical training of students. Teachers need to be able to professionally, innovatively apply digital technologies, artificial intelligence technologies in STEM education (Wang, 2024: p. 213-215).

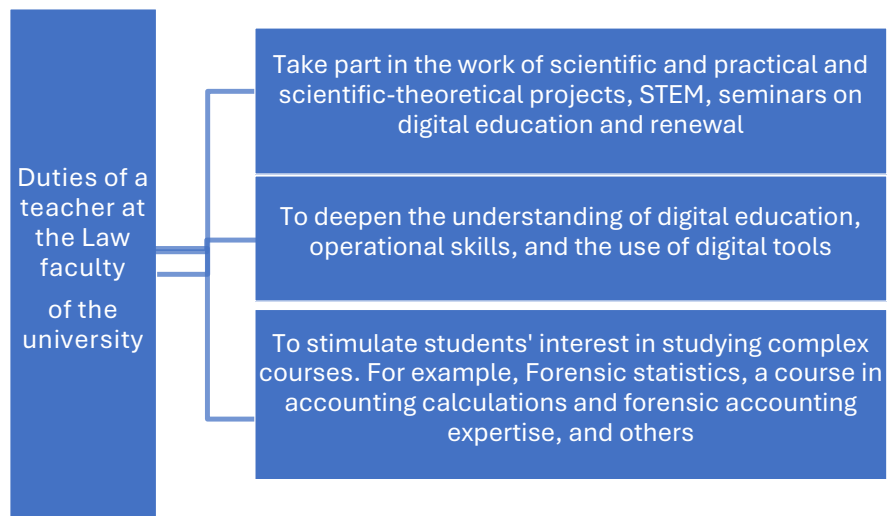
In this regard, it is necessary to participate in seminars on digital education and renewal, in scientific and practical conferences on STEM topics, as well as to include educational materials in online

format, educational applications. Thanks to virtual experiments and modeling tools, students can gain appropriate practical experience, and teachers themselves could use digital technologies more effectively for experimental student learning. Thus, it is possible to further stimulate students' interest in learning such rather complex training courses as "Forensic Statistics", "Accounting Calculations and Forensic Accounting Expertise Course", "Signature Identification (establishment) Course". Such a digitalized approach by teachers could develop the professional skills of law students, as well as increase their literacy in matters of digitalization and the use of artificial intelligence.

If interdisciplinary cooperation is introduced, then teachers of the Faculty of Law will have the opportunity to have almost constant contacts with technical experts within the framework of STEM, which will improve their professional skills in using artificial intelligence technologies, as well as better master the requirements of digital transformation. Such communication and cooperation should not only be encouraged, moreover, on this basis it is necessary to support the process of digital transformation, provide technical support and receive advice on the development of syllabuses, curricula and programs and other educational activities in the AI environment. By creating a group network, legal teachers and technical experts and specialists could comprehensively develop interdisciplinary cooperation.

Scheme 6

Duties of a teacher in the educational process of a university



Results

The use of artificial intelligence technologies improves the quality of students' higher legal education. In order for such a quality to take place, it is necessary to comprehensively regulate a set of actions that would lead to a real improvement in the quality of education in general, higher legal education in particular. In order to improve the use of artificial intelligence in the field of higher legal education in the near and medium term, we would like to propose to the country's legislator to develop and adopt the following new Kazakh laws that would be more or less relevant to the learning process at universities, in their law faculties, as well as law schools: *“On artificial intelligence, on the relationship between data and neural networks”, “On expanding the capabilities of artificial intelligence applications for individualized student (student) learning”, “On methods of strengthening and deepening the predictive analytical abilities of artificial intelligence tools”, “On the possibilities of artificial intelligence technologies to assist in the work of professionals in various fields”, “On improving the organizational and analytical abilities of artificial intelligence for each profession separately”, “On robot teachers and consultants for teaching students practical disciplines”, “On ensuring cybersecurity of the results of artificial intelligence technologies”.*

We can call one of the directions of using AI technologies personalized learning (Walkington, 2024), the student's skills to competently perform independent work, work on himself, on his intellectual and legal development.

This means that AI can easily adapt general legal education to the individual needs and styles of students. The teacher should show and teach students which phrases should be typed into the search engine in order for students to receive personalized learning opportunities so that AI can assist in adapting learning to the diverse needs of students, taking into account the level of knowledge of each of them.

During seminars and practical trainings, students should learn and use the following necessary phrases: “AI for individual educational trajectories”, “personalized learning using AI”, “adaptive AI learning systems”. It will be interesting for teachers to get acquainted with high-quality materials that will appear on computer screens when using phrases such as: “artificial intelligence in education”, “AI for personal curricula”. The potential of AI is such that it can instantly process large amounts of data (big data), automatically analyze legal texts, identify and show students patterns, and help them solve legal cases and tasks. This is how AI helps to increase the effectiveness of legal science education.

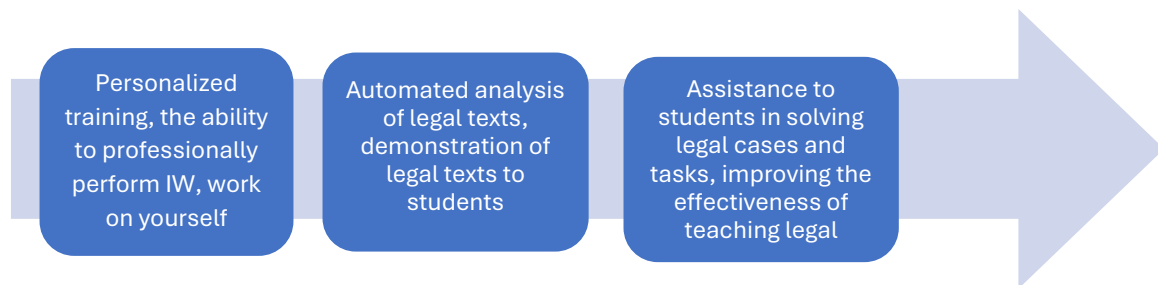
Scheme 7

Proposals for the adoption of new legal, regulatory and international acts, drafts of their names

Legal acts	Regulatory acts	International conventions
<ul style="list-style-type: none"> • About artificial intelligence, the relationship between data and neural networks, • On expanding the capabilities of AI applications for individualized student learning • On ensuring the cybersecurity of the results of AI technologies • On methods of strengthening and deepening predictive analytical abilities of AI tools • About the possibilities of AI technologies to assist in the work of professionals in various fields • On improving the organizational and analytical abilities of AI in each profession separately • About robot teachers and consultants for teaching students' practical disciplines 	<ul style="list-style-type: none"> • Regulatory orders on the training of FIT teachers in practical AI application skills • Regulatory orders on the implementation of AI mechanisms in the specialization 	<ul style="list-style-type: none"> • On promoting the development of AI and its implementation in all spheres of life • About the advantages and mitigation of risks of artificial intelligence • On crime prevention and blocking hostile hacker activities using AI technologies against international peace and security of peoples"

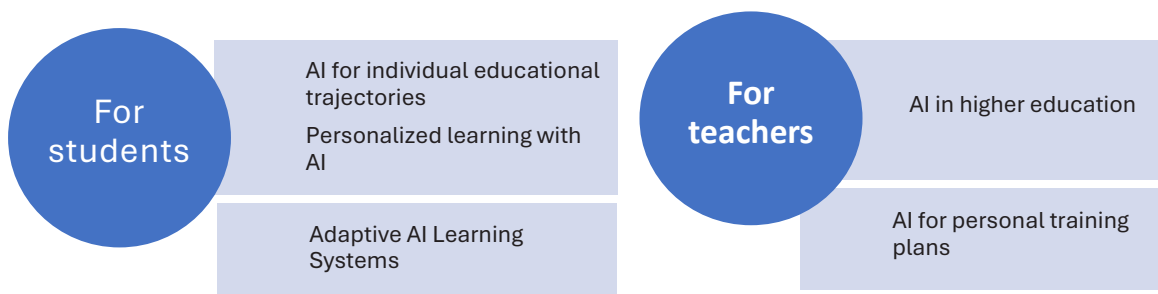
Scheme 8

Technologies for using AI in the educational process



Scheme 9

Proposed seminars and trainings for participants of the educational process



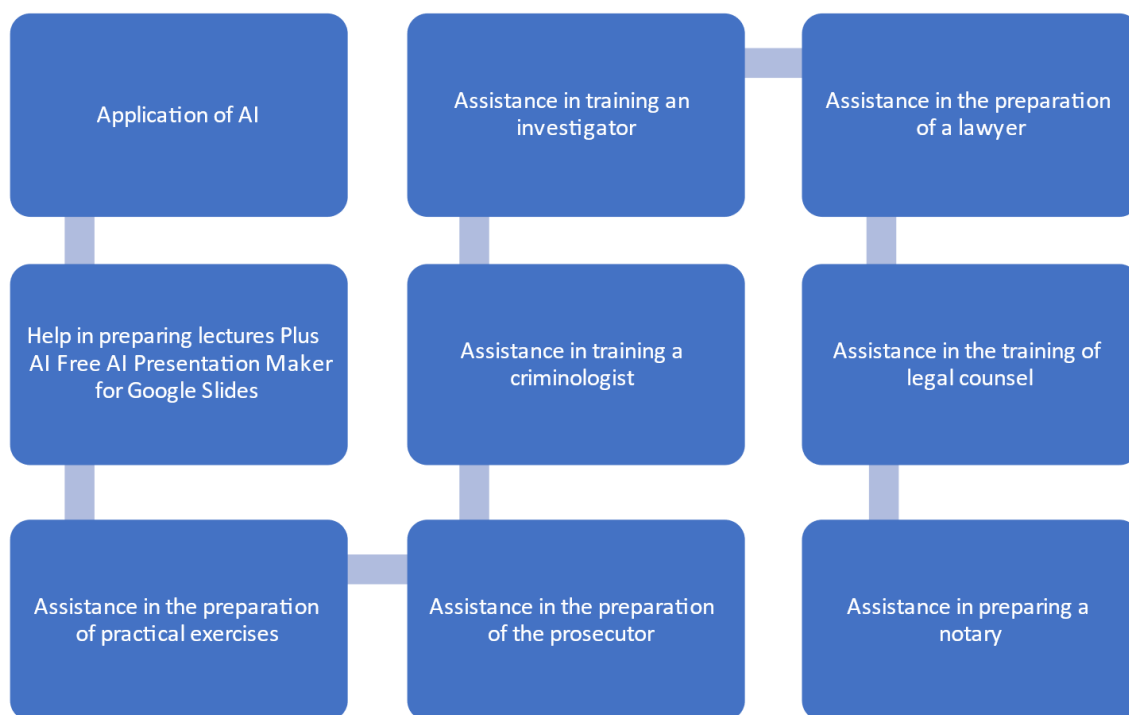
Based on the Kazakh laws recommended by us, adopted through the Parliament of the Republic of Kazakhstan, the standard “On Artificial Intelligence” approved by the Ministry of Science and Higher Education of the Republic of Kazakhstan, instructions and regulations of the Ministry on the introduction of artificial intelligence technologies into the educational process of the country, university rectors, rectors and heads of law schools of the country could develop and adopt their own by-laws acts – regulatory orders on teaching teachers of the faculties of information Technology and artificial intelligence to teachers of other faculties, including law faculties, practical skills in using artificial intelligence in relation to their academic subjects (Fisore, 2024). Another legal act of the rector of the university, rector or head of the law school could

be a regulatory order on the introduction of artificial intelligence mechanisms in the specialization and department of the Faculty of Law (law university) of approximately the following name: “On the specifics of using artificial intelligence technologies in all specializations, departments of the Faculty of Law (university) to improve the quality of higher legal education (international- legal) education”.

Plus AI Free AI Presentation Maker for Google Slides as an AI tool creates and edits lecture presentations in Google Slides using its generative function (What is Plus AI For Google Slides?). The teacher can initiate requests to create planned diagrams, histograms, and then just watch how the AI turns them into visual slides in a very short time. AI can offer several slide options, adjust them according to the wishes of the teacher-compiler.

Scheme 10

Application of AI



If artificial intelligence technologies are used in the preparation and conduct of lectures, for example, on international law, then this significantly enriches the lecture process and makes it more informative, interesting, and effective for students. AI may well help in the search and finding the necessary relevant sources, convincing statistical data, qualified court decisions and other data related to

international law. The teacher can analyze the data presented by artificial intelligence and highlight the most important facts and paragraphs for the lecture. Lecturers should pay attention to programs such as PowerPoint (Albinacorta, 2023), which can create the necessary complex graphs during the presentation of the lecture text. The content of the lectures can be personalized. To do this, it is necessary to use

AI to adapt the material to a specific student audience, taking into account their interests and level of knowledge.

To personalize the content of a lecture on environmental law, for example, with the help of AI, it is necessary to determine the composition of the audience listening to the teacher. In our case, the audience is students. After that, it makes sense to collect information data in which the preferences of the audience are viewed in the form of previous assessments, the facts of their visits to previous lectures by the teacher. In addition, it is necessary to use AI in order to create content of information that would be interesting for students. AI will help you make a selection of texts, visual materials that the upcoming audience prefers to read and watch. This adds more interest and understanding to the upcoming lecture. It is advisable to test the created content with a number of members of the audience who will listen to this lecture. Thanks to such testing, the teacher will receive feedback and will be able to adjust and adapt the materials of his lecture. It is absolutely necessary to ensure that such personalized content is combined with the provisions of the curriculum and generally corresponds to the formulations of the main educational goals.

Legal teachers specializing in legal issues of artificial intelligence, with the help of AI, should compile tests themselves, as well as assist colleagues in compiling tests on their subjects, conducting automatic checks of assignments and tests. This will help faculty members save time. The process of automatic verification of assignments and tests on the history of state and law, for example, may consist of the following actions. To begin with, the teacher must create a bank of questions and answers (70 AI Interview Question Maker), which he intends to use in test tasks. The subsequent action of the teacher should be to determine the evaluation criteria, establish the appropriate time for students to complete the test and other testing conditions. Next, with the help of a specialist, it is necessary to develop programming logic for checking answers to test questions and an algorithm for calculating the results, organize trial testing in order to verify the correctness of the operation of this system. At this stage, it is necessary to connect students who will complete tasks, and the system itself will automatically check the answers to the tests and even give grades. And students should be pre-instructed about the specifics of testing and their participation in it.

In practical classes on the course of civil law, students-future lawyers must solve interactive cases

(“case study – case study” as a method of interactive learning, teaching participants through interaction with each other). This approach, with a significant bias towards taking into account practical classes at the law faculties of the country, has become prevalent in recent years. Theory has ceased to be a monopoly in the training of future lawyers: solving practical cases has become a significant help in preparing students for future practical legal professions. To do this, a specialist in the field of technical issues of artificial intelligence and a civil law teacher together should use AI to develop a variety of interactive cases that students of the faculty, solving them, could acquire practical skills and abilities to work in such legal professions as a judge, prosecutor, lawyer, legal adviser. It is quite difficult to create interactive cases on civil law, since the subject itself is deep and branched. When starting to compile such cases, it is necessary to define goals and objectives. In this regard, the training teacher should have a clear idea of exactly what educational goals he wants to achieve with the help of the cases he compiles. Together, they can and should choose the most appropriate platform for creating such cases. This approach will allow the teacher to create cases within the framework of key topics of civil law. Next, the teacher needs to describe such scenarios that would reproduce the most typical situations in the field of science and practice of civil law. Such cases may be related to civil law contracts, contracts related to private international law, property rights and other institutions of civil law. Of course, a feedback mechanism is needed: the role of such a mechanism is designed to be played by a rating system that operates in an automatic mode (Jordan, 2024: 1-2). At the present stage, AI cannot yet replace a teacher: it can only complement his teaching work.

Modern higher education focuses on the quality of education. In the context of the Bologna system, the quality of education is achieved through student-centered learning. Independent work is of great importance here. Independent work of a student is not only the completion of homework, it is an independent search, the development of a creative attitude to the task, a certain courage in choosing methods of independent study and making the right decision. A responsible attitude to the implementation of independent and practical exercises determines the application of new methods in the system of storing students' independent practical tasks. In this regard, the use of blockchain technology should be noted.

How is blockchain (in English: “block chain”, one of the AI technologies) related to smart con-

tracts? Blockchain is a technology that provides decentralized data storage and ensures their security. The use of blockchain technology in the educational process of the Faculty of Law can be implemented as follows. It is necessary to set up students in the course of independent and practical classes to interact with blockchain platforms and to create simple smart contracts based on the Ethereum payment network, which accumulates funds through the platform to solve the tasks provided for by the smart contract. It uses a block chain where each block contains information about transactions and a link to the previous block. This ensures reliability and the impossibility of changing the data. Smart contracts are digital contracts stored on the blockchain that are automatically executed when certain conditions of a smart contract are fulfilled in advance. Smart contracts allow you to automate the execution of agreements, so that all participants can immediately verify the result, without the involvement of an intermediary and loss of time. Thus, blockchain and smart contracts provide a reliable and effective way to automate agreements and transactions, as well as keep them confidential (Asuquo, 2024).

Now we need to move on to the study of the interaction of artificial intelligence in the process of teaching practical disciplines at the Faculty of Law (“Introduction to the specialty (jurisprudence)”, “Prosecutorial supervision”, “Organization of the court and judicial activity”). Here we will look at the specific ways in which AI can be useful, since the general ways of using AI are discussed above, they are relevant to almost all legal professions. Artificial intelligence (AI) can be of significant help to a law student who wants to choose a job as an investigator.

In the course of conducting classes, the teacher must show the student (future investigator) how AI can be used in the process of conducting an investigation in a relevant criminal case. First of all, he must identify the tasks that he would like to entrust to artificial intelligence. This may be an analysis of the text, on the basis of which he could draw up a competent decision on bringing as an accused in the case. He can set another task for AI: the task of predicting probable scenarios of the course of the investigation, as well as what the testimony of the accused may approximately become by the end of the investigation.

It makes sense to collect such a large amount of relevant data that could be used to train an AI model. This data may include images, text files, audio recordings, and any other data that is related to

the criminal case under investigation. With this approach, AI can provide its services more intensively, make more suggestions and recommendations to solve a particular task. The teacher is obliged to teach the student to choose the most appropriate algorithm or AI model to solve the assigned investigative tasks.

In the process of such training, this model will learn to recognize patterns, so that it can draw conclusions from a number of versions, point to the most preferred of them. You can check the effectiveness of the same model by entering additional new data that was not previously entered. Such an approach will reveal the accuracy and reliability of this model, its ability to respond to new data and issue new or corrected versions to explain the reasons for the commission of the crime under investigation, to substantiate which of the participants in the crime event is the organizer or perpetrator, instigator or co-perpetrator of the crime. The student should be trained in the ability to analyze the results obtained using AI models, should make sure that these results do not contradict each other, if so, why. The teacher should orient the student to the fact that at the present stage, AI models cannot replace a human investigator. In the foreseeable future, he remains the main figure leading the investigation under the relevant articles of the Criminal Code of the Republic of Kazakhstan dated July 3, 2014 and the Criminal Procedure Code of the Republic of Kazakhstan dated July 4, 2014, and artificial intelligence technologies will play a supporting role, thereby providing professional assistance in the work of the investigator.

A criminologist, often referred to as a forensic prosecutor, provides the investigator with significant assistance in solving a crime. The teacher should explain to the student that a criminologist will be able to provide significant assistance to the investigator if he himself relies on correctly selected AI algorithms in his work. A variety of artificial intelligence algorithms can be used in the science and practice of criminology. During the training, the student is informed so that he imagines that he is a criminologist and with what action he would begin to assist in solving the crime that happened. First of all, he should start using large amounts of data on crimes committed in the republic, in the CIS, similar to those committed, and launch appropriate AI technology into it. And this technology will analyze all these crimes within a few seconds, minutes, extract from each crime those episodes, facts that are as close as possible to the crime that the criminologist seeks to solve. The essence of the ability of arti-

ficial intelligence is not only to collect the necessary information, but also to formulate the most likely versions of the crime committed. And he shares these versions with the investigator, telling him his thoughts about the subjects, objects of the crime, about the circumstances and reasons for its commission. In an effort to find a more refined, more likely version of the crime committed, the student in the role of a criminologist, with the help of a teacher, an AI specialist, must select such computer models of AI in order to be able to recreate the most likely scenario of the crime committed with their help.

Students who want to become prosecutors need to be told that this profession is not only responsible, but also extensive in terms of the amount of work performed. In accordance with the Law of the Republic of Kazakhstan dated November 5, 2022 “On the Prosecutor’s Office”, they carry out a lot of work on prosecutorial supervision in almost all spheres of society, support public prosecution in court, ensure human rights, and supervise the investigative and operational activities of law enforcement agencies of the country. That is why they are obliged to critically read almost all documents in various fields, reports, registers, archives, statistical figures, criminal, civil cases, labor disputes, and human rights protection issues. Since they are faced with vast amounts of various documentation, the use of artificial intelligence becomes useful for them. Thanks to the use of artificial intelligence technologies and its neural networks, it becomes possible to analyze documents using AI in an automated mode, which allows you to quickly find and highlight important provisions, minimize time while viewing legal and other texts. The teacher should teach the future prosecutor through AI to classify documents by type, by the time of their preparation and acceptance, by content, and other criteria, which helps in the process of prosecutorial supervision in the search, finding and using the necessary information.

Natural human language processing technology refers to artificial intelligence technologies. With this technology, the future prosecutor should be trained to extract key dates, names, facts, and other important data from video documents accompanied by appropriate AI voice comments. This technology needs to be accompanied by manual checks of human specialists.

This will allow him to easily process massive documents in the future, use them to properly ensure law and order in the territory entrusted to him. The capabilities of AI include its ability to analyze the data involved, identify relevant patterns on this

basis, draw the attention of a future prosecutor’s employee to contradictions in facts, figures, and circumstances, and familiarize him with organizational and legal conclusions that will become necessary in his work at the appropriate area of supervision of legality. Artificial intelligence has the ability to offer recommendations, possible scenarios for the outcome of a particular case. Students should delve into the essence of this ability of AI, because thanks to it in the future it will be possible to make correct, informed decisions, legally justified acts of prosecutorial supervision, to make convincing, legally verified public statements in court.

Teachers should draw students’ attention to the ability of neural networks and AI to automatically track all changes in the country’s legislation, provide the prosecutor and other representatives of the legal profession to be aware of all legislative innovations. Today, there are opportunities to analyze the probability of the outcome of a criminal or civil case, to develop effective judicial strategies: using neural network machine learning algorithms (Rahman, 2024) student (in the future – prosecutor) He can assess the probability of the outcome of the educational criminal or civil case presented to him and issue his final decision on the case. This can be the subject of discussion in the course of a seminar (practical) lesson of a student group.

How can a teacher teach a law student studying at the department of “lawyer’s activities” the possibilities of AI in the practical work of a lawyer? How can artificial intelligence help in the work of a lawyer? Russian translation AI can be useful when using AI translation technology in the process of translating from Russian (Kazakh) into a foreign language, from a foreign language into Kazakh (Russian). This is necessary when working with a domestic lawyer with foreign clients who speak different languages, and with documents drawn up in the same and (or) other languages. Students of law faculties and universities of Kazakhstan do not find it difficult to use this AI technology: they carry out such instant translations through AI translators through Yandex, Google and other search engines. But the teacher should pay special attention to the students – future lawyers that the ability to translate through general AI translation is not enough. You need to choose a more reliable AI translation tool, for example, “DeepL Pro”, which narrowly specializes in legal texts of a certain direction and provides professionally high accuracy of translation of terms, phrases, clerical phrases, synonyms, acronyms (abbreviated expressions).

From a large amount of information, AI has the ability to identify relevant court decisions for lawyers, as well as provide them with such analytical information that would become an important basis for making the right decisions, for developing the right strategy to protect their clients. The teacher at the trainings should show the process of using AI to find relevant laws, other regulatory legal acts, similar judicial practice, which could be extremely necessary for the correct, qualified justification of protecting the interests of his client, so that the judge makes a decision that would suit his client in a specific civil case in accordance with the norms of the Law of the Republic of Kazakhstan dated July 5, 2018 “On advocacy and legal assistance”.

Those students who study in the specialization “legal services for companies” and want to become legal advisers with the help of teachers should learn how artificial intelligence platforms help to automatically compile documents, manage them, fill in data, avoiding blank graphs, check the content, structure of created documents, take into account the correct AI recommendations for improving texts. It should be borne in mind that legal advisers should also learn how to use AI to process large amounts of data (big data) to find the right category of patents, to classify public registries, corporate files, licenses, and other documents according to their content and form so that legally significant facts can be identified, as well as potential risks for the activities of your company. Students can use the capabilities of AI to study the huge mass of reports of their enterprise, related enterprises, companies in order to make it easier to develop a company development strategy for the next 3-5 years, to equip the management of their company with legally sound decisions and draft documents for the implementation of this strategy. And here the teacher should use the field that has arisen for scientific, creative discussions in the student study group to determine the correctness of the strategic course of the company’s development and its implementation chosen by artificial intelligence and a responsible student – the future legal adviser.

Students in the role of legal advisers to compile texts of documents using AI must perform the following actions under the supervision of a teacher. First of all, they must specifically determine what type of document should be compiled using AI and what purpose should be set for it. Such a document may be an agreement between two business entities, a buyer’s complaint, or a statement of claim from a counterparty under the agreement.

Artificial intelligence can provide another representative of the legal profession, a notary, with the following services. AI can assist in the automated solution of routine, daily repetitive tasks and actions in the form of careful verification of documents submitted by clients, filling out various forms and keeping records of transactions. When AI technologies take on such tasks, the notary frees up time that he could use to solve more complex tasks. Students – future notary assistants under the guidance of a teacher of academic subjects “Profession – notary”, “Notary law” could use AI mechanisms to quickly find and analyze a large amount of data, which would help the notary prepare documents and verify appropriate legal information on the case for the client in accordance with the provisions of the Law of the Republic of Kazakhstan dated July 14, 1997 the year “About the notary”. In addition, students will be informed that AI can provide the notary with access to the latest legislative, regulatory legal materials, as well as training resources, which will allow the notary to know the latest changes in the legislation of the republic in real time.

Many law faculties of universities have departments of “international law”. Public international law and private international law using artificial intelligence technologies are taught both in this department and in the departments and specializations of law faculties studied above. Graduates of not only the International Law department, but also any other department of the Faculty of Law can become investigators, prosecutors, judges, and lawyers of an international profile. Teachers of the Department and Department of International Law teach international legal disciplines to all students of the Faculty of Law, bring them knowledge on 142 points of the UNESCO Resolution on Ethical Aspects of AI dated November 18, 2021 (<https://ifap.ru/ofdocs/unesco/airec.pdf>), 23 Azilomar Principles of AI (2017), according to the norms of the European Union Law “*On Artificial Intelligence*” dated December 8, 2023 (<https://www.forbes.ru/tekhnologii/508210-doveli-do-uma-kakoj-zakon-ob-iskusstvennom-intellekte-prinaliv-evrope>), according to the provisions of the UN General Assembly Resolution “*Using the capabilities of safe, secure and reliable AI systems for sustainable development*” (<https://bit.ly/3QF5D6J>). Taking into account the trend of AI development in the world, the need for its accelerated implementation in all spheres of life, the authors of this article suggest that the Republic of Kazakhstan, as a subject of international law, act as an initiator of the

development and adoption of international conventions “*On promoting the development of AI and its implementation in all spheres of life*”, “*On the advantages and mitigation of risks of artificial intelligence*”, “*On crime prevention and blocking hostile hacker activities using AI technologies against international peace and security of peoples*”, the projects of which will be studied by students of law faculties and universities of Kazakhstan.

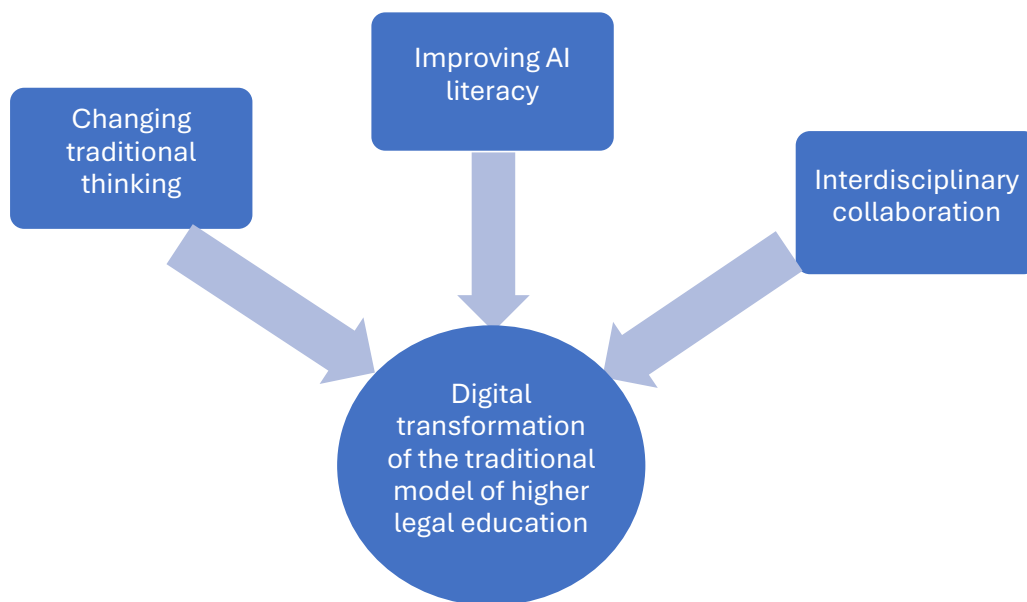
Conclusion

Digital transformation significantly aids the implementation of digital reform in traditional higher legal education models. Law faculty teachers at universities and law schools nationwide must swiftly

adapt their traditional thinking, enhance their AI literacy, and master digital transformation techniques in the educational process. Digital transformation and AI technologies also necessitate interdisciplinary collaboration between legal and technical (technological) academic discipline instructors. STEM system teachers can leverage their digital literacy on artificial intelligence to implement both interdisciplinary research and educational innovations, increasing AI literacy among teachers and students alike. Overall, national and international legal norms facilitate the accelerated introduction of artificial intelligence mechanisms into university educational processes, including law faculties, and substantially improve the quality of higher legal education in the country.

Scheme 11

Digital transformation of the traditional model of higher legal education



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Authors' Contributions

S.V. Tlepina – Conceptualization; Methodology; Supervision; Project administration. M.A. Sarsembayev – Validation; Formal analysis; Writing – review & editing; Investigation (legal analysis). N.M. Berdibaev – Data curation; Investigation; Writing – original draft; Visualization. Y.B. Ayapbergenov – Writing – original draft; Writing – review & editing; Corresponding author; Project coordination; Resources.

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