

HARNESSING ARTIFICIAL INTELLIGENCE WITH HIGHER EDUCATION IN VIETNAM: OPPORTUNITIES, CHALLENGES, AND RECOMMENDATIONS FOR LEGAL UNDERGRADUATE EDUCATION

*APROVEITANDO A INTELIGÊNCIA ARTIFICIAL COM O ENSINO SUPERIOR NO
VIETNÃ: OPORTUNIDADES, DESAFIOS E RECOMENDAÇÕES PARA O ENSINO
DE GRADUAÇÃO EM DIREITO*

Doan Hong Nhung

Is a lecturer at Vietnam National University, Hanoi, University of Law. She got a doctor degree in law from Vietnam National University, Hanoi, School of Law and Assoc.Prof from 2015. Address: Address: 144 Xuan Thuy, Dich Vong Hau, Cau Giay, Ha Noi, Vietnam
doanhongnhungvn@gmail.com

Nguyen Xuan Bao

Is a second-year student at Foreign Trade University, Hanoi, specializing in International Business Law. Address: Address: 91 Chua Lang, Lang Thuong, Dong Da, Ha Noi, Vietnam
nguyexuanbao04ftu@gmail.com

Vu Thi Hong Ha

Is a second-year student at Hanoi Law University, Hanoi, specializing in Advanced Jurisprudence. Address: Address: 87 Nguyen Chi Thanh, Lang Ha, Dong Da, Ha Noi, Vietnam
vuthihongha40hlu@gmail.com

ABSTRACT

The purpose of the current research was to use artificial intelligence with higher education in Vietnam: opportunities, challenges and recommendations for legal undergraduate studies, Research method: the current library research method using articles from PubMed, Embase, Scopus databases., Medline and Web of Science using the keywords of artificial intelligence, higher education of Vietnam, was an expert in law. Results: The reviews of articles in the fields of artificial intelligence and higher education in educational fields, especially law in Vietnam, showed that in the present era, the use of artificial intelligence (AI) has become increasingly popular in Vietnam. Artificial intelligence is being used in higher education in general, and law schools show particular promise. However, this software has significant differences compared to other domains. Conclusion, according to the research results, we conclude that artificial intelligence offers many transformative opportunities for higher education in Vietnam. And by effectively using the power of artificial intelligence, Vietnamese universities can improve the quality of their educational offerings and align them with the evolving demands of society, uniting technology developers and students across Vietnam.

Keywords: Artificial Intelligence, Higher education, Legal education, Legal profession.

RESUMO

O objetivo da pesquisa atual era usar inteligência artificial com ensino superior no Vietnã: oportunidades, desafios e recomendações para estudos de graduação em direito, Método de pesquisa: o método de pesquisa de biblioteca atual usando artigos dos bancos de dados PubMed, Embase, Scopus, Medline e Web of Science usando as palavras-chave de inteligência artificial, ensino superior do Vietnã, era um especialista em direito. Resultados: As revisões de artigos nas áreas de inteligência artificial e ensino superior em áreas educacionais, especialmente direito no Vietnã, mostraram que na era atual, o uso de inteligência artificial (IA) se tornou cada vez mais popular no Vietnã. A inteligência artificial está sendo usada no ensino superior em geral, e as faculdades de direito mostram uma promessa particular. No entanto, este software tem diferenças significativas em comparação com outros domínios. Conclusão, de acordo com os resultados da pesquisa, concluímos que a inteligência artificial oferece muitas oportunidades transformadoras para o ensino superior no Vietnã. E ao usar efetivamente o poder da inteligência artificial, as universidades vietnamitas podem melhorar a qualidade de suas ofertas educacionais e alinhá-las com as demandas em evolução da sociedade, unindo desenvolvedores de tecnologia e alunos em todo o Vietnã.

Palavras-chave: Inteligência Artificial, Ensino superior, Educação jurídica, Profissão jurídica.

Introduction

The Industrial Revolution 4.0 is greatly influencing all aspects of social life through numerous technologies such as social media, cloud computing, mobile devices, big data analytics (Social, Mobile, Analytics, and Cloud - SMAC), and the Internet of Things (IoT). Among these advancements, AI's rapid development has directly contributed to innovation and improvement in education quality, from didactic organization and evaluation to the role of teachers and lecturers.

AI's opportunities and challenges in higher education is a topic of constant discussion in the era of 4.0 technology. AI is gradually transforming all aspects of life, and education is no exception. This article assesses the considerable potential that AI offers to higher education. It also identifies challenges that need to be addressed to effectively apply artificial intelligence to education in general.

Theoretical Framework

Artificial Intelligence (AI) is commonly described as human-created intelligence embodied in software systems and machines, in contrast to the natural intelligence inherent in humans and animals. It is also a branch of computer science.

According to John McCarthy, an American computer scientist, AI is defined as: "The science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the task of using computers to understand human intelligence, but AI does not restrict itself to biologically observable methods" (John McCarthy, 2007). Some typical examples of AI include self-driving cars, automatic translation software, virtual assistants on phones (such as Gemini, Character.AI...), or virtual opponents (bots) in video games on phones.

In "Artificial Intelligence: A Modern Approach" (2001), Stuart Russell and Peter Norvig provide a comprehensive synthesis of various AI definitions, encompassing its essence, manifestations, and goals: "Artificial intelligence is the art of creating machines that perform functions that typically require human intelligence.", "Artificial intelligence is the actions of machines that are associated with human thought, such as decision-making or problem-solving.", "Artificial intelligence is research into the possibility of making machines learn, reason, and act.", "Artificial intelligence is the study of how to make computers do things that, at present, can only be done by humans" (Stuart Russel - Peter Norvig, 2021).

Drawing upon extensive research and expert evaluations, AI is characterized by eight fundamental attributes: (1) Creativity, (2) Unpredictability, (3) Autonomy, (4) Rationality, (5) Self-Learning and Improvement, (6) Data Collection and Communication, (7) Efficiency and Accuracy, (8) Flexibility and Alternative Solutions (Bali, 2017; Bui & Nguyen, 2023).

In essence, artificial intelligence embodies the "thinking" of machines, where devices mimic human cognitive processes to solve problems ranging from simple to complex. Specifically, AI entails human-designed intelligence that replicates human learning and thinking patterns within machines, enabling them to acquire human-like abilities and intelligence. This includes the capacity to reason, solve problems, communicate through language comprehension, learn independently, adapt, and continuously improve. AI's transformative potential has revolutionized various industries, including healthcare, finance, transportation, and manufacturing. As AI research continues to advance, its impact on society is expected to grow even more

profound, shaping the future of human endeavours and redefining the boundaries of what is possible.

Literature Review

Researching artificial intelligence is always a novel topic and attracts many researchers. Not only in Vietnam but on the world scale, there are numerous studies relevant to the artificial intelligence theme. On a limited scale, researches that are related to the topic can be found in studies such as John McCarthy (2007) with “*Computer Science Department Stanford University*”; Wai Yan Nyein Naing (2008) with “*Meet World’s First AI Digital Human Teacher!*”; Kowalski S., Hoffman R., & Jain R., Mumtaz M. (2011) with “*Using Conversational Agents to Help Teach Information Security Risk Analysis*”; Judy Kay (2015) with “*Whither or wither AI and education?*”; Hilbert M. (2015) with “*Big Data for Development: A Review of Promises and Challenges*”; Nye, B.D. (2015) with “*Intelligent Tutoring Systems by and for the Developing World: A Review of trends and Approaches for Educational Technology in a Global Context*”; Luckin R., Holmes W., Griffiths M. & Forcier L. B (2016) with “*Intelligence Unleashed: an argument for AI in Education*”; Bali, Maha (2017) with “*Against the 3A’s of EdTech: AI, Analytics, and Adaptive Technologies in Education*”; Shlomit Yanisky Ravid & Xiaoqiong (Jackie) Liu (2017) with “*When Artificial Intelligence Systems Produce Inventions: The 3A Era and an Alternative Model for Patent Law, Cardozo Law Review, forthcoming 2017*”; Stuart Russel & Peter Norvig (2021) with “*Artificial Intelligence: A modern Approach*”; Huyen Nguyen (2021) with “*From 75 to 98% of Law students have jobs 12 months after graduation*”; University of Education - Vietnam National University, Hanoi (2022) with “*Virtual teacher assistant software*”; Hong Bang University International (2022) with “*Current demand for human resources in the faculty of Law*”, etc.

Methods

To investigate the application of artificial intelligence in higher education in Vietnam: Opportunities, challenges, and some recommendations for undergraduate law training, the authors mainly used traditional research methods of social sciences and legal sciences, including the legal analysis method, legal effectiveness assessment method, and comparative law method.

Overall, the above research methods were used by the authors in a closely integrated and harmonious manner to achieve the research objectives of the article.

Results and Discussion

Some prevalent artificial intelligence tools in higher education

Artificial intelligence (AI) has revolutionized education, providing both students and teachers with a wealth of efficient software, applications, and tools to enhance their learning and working processes. This includes emerging trends like smart classroom technology and intelligent tutoring systems. Some prevalent artificial intelligence tools in education can be mentioned: Gemini, Learnt.AI, Character.AI, etc. Specifically:

Gemini is a smart chatbox constructed based on Google's Language Model for Dialogue Applications (LaMDA), this allows Gemini to be able to naturally and constantly interact with users in dialogues. Gemini can answer questions, provide information from overview to detail about diversified fields, especially useful with higher education, and from that serve the researching, teaching or learning process of teachers and students.

Learnt.AI is an online application providing effective teaching and learning ideas. Lecturers using Learnt.AI can save time and effort in creating qualitative, interesting lectures with exercises, and tests that are diverse, plentiful, and suitable for the scope of the subject. This tool helps lecturers' jobs become more automatic and saves time and effort.

Character AI is an AI application that allows users to be creative and interact with their own AI characters. This tool uses artificial intelligence technology to create characters, and figures that can understand and answer users' questions, and demands naturally and truthfully. In higher education, Character AI can generate numerous teaching methods that are more effective and attractive to students.

It can be seen that artificial intelligence has certain applications with both lecturers and students in higher education. Artificial intelligence when being applied to education brought back a whole new aspect. Even though it is still in its first phase, these applications are expected to widely develop in the future.

Opportunities and Challenges of Artificial Intelligence in Higher Education

Emerging around the 1970s, Artificial Intelligence in Education (AIED) has focused on the research, development, and evaluation of computer software to enhance teaching and learning. The long-term goal has been identified as gathering learner feedback, assessing learner abilities and causes of deficiencies, personalization for an individual or group of learners, and ultimately utilizing AI techniques to explore and develop teaching and learning theories (Judy Kay, 2015). With its increasingly remarkable advancements, the support of artificial intelligence has brought forth both opportunities and challenges for contemporary higher education.

Opportunities for Vietnamese Higher Education Empowered by Artificial Intelligence

Firstly, automating educational activities:

In traditional education, instructors often engage in repetitive and tedious tasks such as grading assignments, evaluating essays, and marking student papers. These tasks can be time-consuming and draining, diverting instructors' attention away from more impactful teaching and research activities. AI has emerged as a powerful tool for automating and streamlining these administrative and pedagogical processes, alleviating the burden on educators and enabling them to focus on more meaningful endeavours. AI offers a suite of interactive and customizable software tools integrated with virtual reality and deployed across

digital devices. Notable examples include automated grading systems for multiple-choice tests, written assignments, and essay evaluations, such as GradeScope and Turnitin. These AI-powered tools have significantly reduced the time and effort required for instructors to handle administrative tasks, assignment distribution, and grading, allowing them to dedicate more time to fostering student engagement and individualized learning.

Secondly, a personalized learning journey:

AI-powered algorithms can personalize the learning experience for each student based on their individual level, interests, and emotional state. This optimization of learning time, focus on weaknesses, and tailored learning paths can significantly enhance the educational process. AI can identify individual strengths, weaknesses, and learning styles, recommending appropriate lessons and providing personalized feedback. It can offer more challenging content to accelerate learning for advanced students while providing additional support and resources for those who need it. This personalized approach ensures that students of all abilities can progress at their own pace without hindering the learning of others. Personalized learning empowers students to learn anytime, anywhere while transforming the role of educators from lecturers to facilitators, enabling them to provide more individualized guidance and support.

Thirdly, virtual assistants and virtual instructors:

Integrating AI into the classroom effectively introduces students to a "virtual instructor" or "virtual assistants". This AI-powered virtual instructor, utilizing machine learning and AI, provides the most effective and practical actions and websites to gather and analyze student learning "habits" and "behaviours." This data model also helps identify common patterns among multiple students and perform predictive analytics, such as forecasting how students will behave in the future.

The use of more advanced AI could involve complex image algorithms to analyze the facial expressions of learners, such as boredom and disengagement, and correlate them with other data collected from other cases to create a more comprehensive picture of the learner's profile. The system also provides "suggestions" and "advice" to students in choosing an appropriate learning method

or course. One notable example is Will, a digital technology teacher created by AI software company Soul Machines and energy company Vector in Auckland, who has been officially teaching in several New Zealand classrooms, delivering lessons on renewable energy. (Kanaev, Darnell, & Giang, 2018; Uoc, 2023)

In addition to supporting student learning, AI also supports virtual teaching assistants. Specifically, the University of Education at Vietnam National University, Hanoi, has successfully developed a "virtual teaching assistant" software that helps teachers and leaders manage teaching records, accumulate evidence throughout their professional activities, and online learning methods for users. Additionally, AI can be leveraged by embedding it into educational application self-assess according to the standards and criteria of the general education teacher professional standards (A. Q. Nguyen, 2024). With the help of AI, teaching and learning can take place anywhere, anytime. AI can replace teachers in some cases, while also optimizing learning costs and investments for students and teachers (Thao, 2023).

Fourthly, AI facilitates personalized and consistent feedback:

Conversational chatbots, a departure from traditional online learning systems, can play a pivotal role in education by providing students with immediate and personalized feedback. Students can continuously interact with these chatbots by asking questions related to a specific topic (Kiem, Hiep, Van Tuyet, & Tdh, 2023) AI chatbots serve as valuable tools for gathering student information regarding their interests, habits, and learning styles, even identifying common mistakes made by students in a particular grammar point. Chatbots in education can function as dedicated "teaching assistants" by (1) Being equipped with a script of frequently asked questions (FAQs), (2) Tracking students' progress and self-directed learning, (3) Providing personalized feedback and comments for each student, (4) Offering individualized subject and study material recommendations.

Challenges of AI-Powered Higher Education in Vietnam

The implementation of AI in Vietnamese higher education presents numerous opportunities while also posing significant challenges that require careful consideration and effective solutions. One of the primary challenges lies in the

demand for new skills. Effectively utilizing AI necessitates that both faculty and students possess the necessary skills to operate and maximize the potential of this technology. Moreover, AI implementation requires substantial financial investment, particularly for universities in developing countries like Vietnam. Additionally, the ethical implications of AI in education raise concerns regarding algorithmic bias, academic dishonesty, and data privacy.

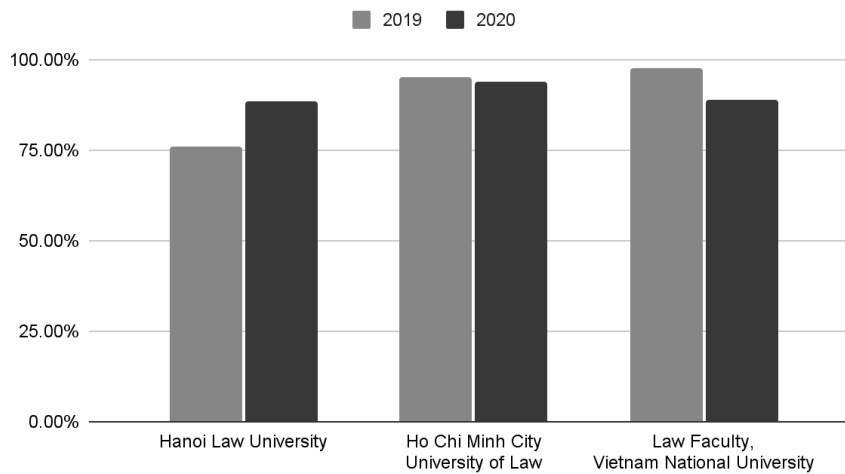
Uneven access to AI technology can lead to disparities among students across different universities. Over-reliance on AI may hinder the development of soft skills and social interaction abilities among students. The financial burden of investing in AI systems poses a significant challenge, especially for universities in developing nations like Vietnam. Government and organizational support is crucial to bridge the gap in AI accessibility within the education sector. The adoption of AI may lead to job displacement in the education sector, impacting the livelihoods of both faculty and students. Training and support programs are essential to assist both parties in adapting to this transition.

Realities and Recommendations for legal undergraduate education activity in Vietnam when developing AI in higher education

Realities of Legal Undergraduate Education Activity in Vietnam

In recent years, legal undergraduate education offered by many Vietnamese universities has, to a moderate extent, addressed the needs of a significant portion of society. Evidence of this success can be seen in the observation that a substantial number of law graduates have secured key positions within state agencies, particularly the judiciary, within a short period following graduation. (Figure 1).

Figure 1 – Law Graduate Employment Rates at Three Vietnamese Universities (2019-2020) (Горчаков, 2023)



Source: Synthesized from data reports of Vietnamese universities by a group of authors.

While Vietnam graduates approximately 4000 to 5000 law students annually, this number falls short of meeting the demand for legal professionals. This gap can be attributed, in part, to a general lack of human resources within legal education. Additionally, the increasing integration of Vietnam into the global economy necessitates a skilled legal workforce with strong linguistic abilities, particularly in English, to cater to the needs of foreign enterprises seeking legal counsel and consultancy Hong Bang University International (Cameron, Pham, & Atherton, 2018).

In recent years, the teaching staff has become increasingly qualified and possesses higher professional abilities. The training program is undergoing a gradual transformation, becoming more advanced and better aligned with Vietnam's socioeconomic conditions (Van Toan Nguyen). It also emphasizes connections to the country's political, cultural, security, and national defense aspects, as well as international law. The textbook reference system provides students with a relatively comprehensive and diverse range of resources, effectively supporting their learning and scientific research effort. Increased focus is being placed on student well-being and academic quality. This has led to a wave of innovation in teaching methods, material facilities, and management practices.

Additionally, greater investment is being directed towards political and student affairs activities (L. T. M. Nguyen, Tran, Van Pham, Nghiem, & Duong, 2022).

Despite the advancements made, limitations remain in Vietnam's legal education activities, particularly regarding the slow pace of innovation in teaching methods that leverage AI). While AI has seen significant development in recent years, its integration into legal education and the creation of novel teaching methods utilizing AI technology has progressed at a sluggish pace. Several factors contribute to this lag, including insufficient funding, limited material resources, and a potential lack of expertise among some faculty members. Furthermore, transitioning from traditional pedagogical approaches to AI-powered methods presents additional challenges. Both students and instructors may require time to adapt to these new methods and fully embrace their potential.

Recommendations for Integrating AI into Legal Undergraduate Education in Vietnam

Firstly, ensuring equity and fairness:

While AI presents numerous positive aspects, it can also exacerbate inequalities among marginalized and disadvantaged populations, who are more likely to be excluded from AI-powered education. This results in a new form of digital divide: the divide in utilizing data-driven knowledge for informed decision-making. When designing policies for AI in higher education, ensuring equity and inclusion is paramount. A study identified the primary obstacles to AI integration in education in developing countries as 1) ICT hardware availability; 2) electricity availability; 3) internet reliability; 4) data costs; 5) students' basic ICT skills; 6) language; and 7) lack of culturally relevant content. Hilbert (2015) highlights that the lack of basic infrastructure also creates a new digital divide in using data-driven knowledge for informed decision-making. Consequently, ensuring both the quantity and quality of AI implementation and utilization is crucial.

Secondly, input source verification:

Verifying input sources is paramount when implementing AI as a tool to support faculty and students in legal education. These sources, to some extent, reflect the quality of education provided by the institution. All such products must

be carefully screened, verified, and possess high levels of authenticity. This is essential because unscientific or no creatively-transparently verified input information can lead to the dissemination of misinformation and superstition, negatively impacting educational quality, particularly in the current context of Vietnam's educational accreditation activities.

Thirdly, ensuring faculty and student competence, accessibility, and opportunities:

Teaching extends beyond mere knowledge transmission; it encompasses fostering creativity, social-emotional intelligence, and critical thinking. Educators must discern the opportune moments to integrate AI-powered tools, recognizing that these tools should be designed to support educators' needs, not replace their expertise. To effectively utilize AI-powered tools, educators require the following competencies: Understanding AI-assisted systems: Educators should grasp how AI-enabled systems can enhance and streamline the teaching and learning process; research and data analysis skills: Educators should possess proficiency in research and data analysis to effectively evaluate and leverage AI-generated insights; advanced management skills: Educators must develop new management skills to orchestrate human and AI resources effectively; harnessing AI for human-centred tasks: Educators should leverage AI to automate repetitive tasks, freeing up time for more meaningful human interactions, such as personalized guidance, emotional support, and interpersonal communication skills development; critical perspectives on AI's impact: Educators should cultivate a critical understanding of AI's influence on human society and equip students with new computational thinking frameworks and digital skills to enhance their capabilities. Empowering Students: Students must be equipped with the fundamental knowledge to utilize AI-powered applications and provided with early exposure to AI technologies through computers, smartphones, and other accessible means. This necessitates concerted efforts from the government, social organizations, legal education institutions themselves, and businesses through collaborative programs and student support initiatives. By empowering educators and students with the necessary competencies and ensuring equitable access to AI technologies, we can harness the transformative power of AI

to revolutionize legal education, fostering a generation of critical thinkers, creative problem solvers, and empathetic legal professionals prepared to navigate the complexities of the digital age.

Fourthly, the development of public policies related to AI in education:

To foster a comprehensive and diverse AI ecosystem in education, governments must implement additional mechanisms and coherent policies. These efforts should encompass: Attracting investments to support AI research and development initiatives; founding dedicated AI research center to drive advancements in the field; and recruiting and training qualified AI professionals, particularly within higher education institutions. Moreover, encourages collaboration between the public and private sectors in AI training, research, and application development. This collaborative approach will facilitate resource sharing and ensure educational products align with labor market demands.

Conclusion

The current circumstances are highly provocative. Today, AI applied to business focuses more on finding and analyzing data to provide forecasts, suggestions, and decision support, facilitating human-computer interactions and automating certain responses. This focus is critical for business' digital transformation, particularly for data-driven decision-making. With a projected impact of increasing global GDP by 14% by 2030 (Dermawan & Mezei, 2023; Vu & Dong, 2019). AI's present capabilities include building simulation models, or propensity to purchase, personalising the purchasing process via recommendation systems based on machine learning technologies, and virtual assistant contacts to aid purchases. These capabilities all present significant opportunities to enhance customer experiences with brands while simultaneously monetising them. Therefore, the intelligent experience economy has entered a new stage. Bonnet and Westerman explain this experience on a worldwide scale, digitally linking all partners in the digital business ecosystem (M. D. Nguyen, Nguyen-Thi, & Nguyen-Dinh, 2022; Nguyễn et al., 2023). with the confidence of researchers, investors, and

businesses. Advances in machine learning, the availability of much more powerful computers, and new data processing capabilities have ushered in a new era in which AI is viewed as both a self-learning technology and a critical component of digital transformation and the so-called fourth industrial revolution (A. Q. Tran et al., 2021; T. M. Tran, 2023). While these AI applications are still evolving, the advent of quantum computing will eliminate criticism regarding AI's restrictions and existing limitations (Akbari et al., 2024). Quantum computing and AI are transformative technologies, and improvements in quantum computing will increase the pace of growth in AI tenfold. Although it is possible to develop functioning AI applications on ancient computers, their processing capacity is limited. Quantum computing has the potential to deliver the quantum leap that AI requires to address more complicated problems in a wide variety of industries and to engage in true intelligent reasoning (Huynh et al.; Van Anh, 2022). As previously stated, digital transformation and AI transform company models and enhance human interactions, facilitating corporate structure. This is a genuinely global corporate revolution in which technology has altered every step, even leading to the digitizing of the products themselves. Undoubtedly, technology is the primary enabler of digital transformation, with AI playing a major role (Phan, 2021). While the most critical aspect of the digital transformation process on a global scale is the transformation of the business itself, this process should be viewed as a way to increase a firm's efficiency and sustainability rather than as an end in itself. Thus, Boulton notes that 'digital transformation constitutes the great pending process to be completed in a large majority of organizations after a first stage of integrating digital devices and networks (Phan, 2021; Van Hoang, 2024).' Artificial intelligence makes it possible to provide learning models based on the learner's individual abilities and backgrounds. Certainly, people's learning models are different from each other; Using artificial intelligence, professors can pay attention to the differences between people and provide students with personalized models. According to the feedback they get from the classroom, professors take several steps; A professor in a classroom of 60 students is not able to provide multiple versions of lesson content that are personalized based on the individual characteristics of students. In addition,

the limitation of the teacher in the classroom is not only limited to the prescription of the common prescription. The professor cannot focus on the students one by one, but by using artificial intelligence, he can prescribe various prescriptions and monitor the progress of each student. The path of education is like a journey and a separate plan should be provided for each person (Hang & Bac, 2024; Nehru, Cuong, Prakash, & Huong, 2023). Many countries have seriously planned in the field of artificial intelligence. The first step is that the government should believe in artificial intelligence and new technologies and use the experts present in the country to develop a roadmap for the application of artificial intelligence (T. T. Nguyen, Nguyen, Kend, & Pham, 2023). Also, the budget needed for new technologies should be allocated; Sometimes a budget is included for new technologies, but because there is no structure for it, the allocated budget is wasted. In addition, proper culturalization for the use of artificial intelligence should be done so that its beneficial results can be seen in the society (Hang & Bac, 2024; Tien, 2023). From the point of view of experts in the field of digital technologies, artificial intelligence will provide the ground for transformation in other fields, including in education, at a stunning speed (Hoa, Mai, & Linh). In the current situation, some take advantage of the advantages of artificial intelligence to strengthen skills, such as language learning, and a group of people go to AI training packages and courses to keep up with this technology (Chanh et al., 2023). According to a report from Oxford University about the consequences of the development of artificial intelligence in education, the corona pandemic created the grounds for accelerating this process to the point that in the first year after corona, 36% of the world's educational institutions switched to using digital platforms, and 45% of language learners They also entered the classes through the digital portal. This report adds: After the experience of the pandemic, more than 70% of educators in the United States and the United Kingdom are optimistic about the consequences of the development of artificial intelligence in the field of education. However, we cannot ignore the negative consequences of opening this digital door to human life. Examining the consequences of the prominent presence of AI in the field of education led IRNA researcher to talk with "Mement Abedini Beltrek", associate professor of the

Department of Educational Sciences of Mazandaran University, and "Ali Shaker", a doctoral student in communication sciences and a lecturer of the electronic media course. Dr. Shaker, however, began his remarks by focusing on the advantages of various technologies, especially artificial intelligence, in education and stated: New technologies such as artificial intelligence have a great capacity in education and learning (Bui & Nguyen, 2023). AI technology can be used to personalize instruction, provide fast and real-time feedback, and create engaging and interactive learning experiences. We can take training from a collective mode to a personalized one; It means that we no longer need to teach a subject or lesson to all people or students (Ülkü, 2023). We can use this possibility to meet individual needs. In this way, all students have the opportunity to continue their work in the field they are more capable of and may make this effort and the pursuit of success more attainable (Pham, Nong, Simshauser, Nguyen, & Duong, 2024). On the other hand, the speed is such that at the moment of handing over the exam paper, the result of the exam will be determined without delay (Pham Tra & Dau Thi Kim, 2024). Artificial intelligence can be used to analyze student responses to test questions or assignments and provide immediate feedback to students. In this way, these people can find out their mistakes, understand and avoid repeating that mistake (A. Q. Nguyen, 2024). AI tools can also give teachers feedback on how they are teaching. Parents can also track their child's academic progress with this tool. The advantages of this process are not limited only to schools and universities. Education of citizens is also very important in society (Luong, 2023). Hence, with AI tools, we can provide feedback to citizens about their participation in society, measure government performance, and learn more about the details of various business services (Anh et al., 2024). For example, AI can be used to analyze citizens' participation in online surveys and provide immediate feedback on how they participated (Thuong, 2023). This feedback can help citizens gain a better understanding of how their contributions affect society (Maheshwari, 2023). Artificial intelligence can create interesting and interactive experiences in the field of education and make people enjoy learning (Truong, 2023). Artificial intelligence presents a plethora of transformative opportunities for higher education in Vietnam. By harnessing the power of AI

effectively, Vietnamese universities can elevate the quality of their educational offerings, aligning them with the ever-evolving demands of society. However, to fully realize this potential, a collaborative effort is paramount, uniting educators, administrators, technology developers, and students nationwide.

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