The impact of artificial intelligence on the development of modern society

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Abstract. This study explores the impact and perceptions of artificial intelligence (AI) in modern society, focusing on the attitudes of young individuals in Kazan, Russia. The purpose of the research is to investigate the integration of AI into various facets of life and its implications. Employing qualitative and quantitative research methods, the study assembles a diverse focus group and conducts a sociological survey among 2206 Russian youth to gauge digital socialization and competencies. The results reveal that AI, in its current state, serves as a valuable support tool for professional, educational, and creative tasks but is not viewed as a complete replacement for human capabilities. However, concerns arise regarding potential job displacement, creativity's degradation, and data security threats. In conclusion, while AI holds promise for transforming industries and daily life, it remains a tool with limitations. Responsible AI implementation and further research are imperative to address ethical dilemmas and societal challenges. Striking a balance between AI's potential and its consequences is essential to ensure a harmonious coexistence between technology and humanity.

1 Introduction

With the development of digital technology, the global community is faced with an innovative and controversial process of implementing artificial intelligence not only in industrial production, but also in daily life [1, 2]. Given the widespread use of AI in recent years, researchers are faced with a valid question regarding the social aspect of the spread of modern technology and its impact on social processes [3]. Artificial intelligence affects all areas of human life, from work to creative activity. Part of the community has concerns about replacing their labor with AI, which almost eliminates the human element by not making mistakes and maximizing productivity to a whole new level [4]. AI represents the use of computers to create algorithms designed, based on data analysis, machine learning (not present in all systems), to replace humans in performing a certain range of tasks requiring intellectual activity [5]. Such professions as journalist, translator, writer, accountant, etc. may disappear in the next decades, because of this it is relevant to emphasize the seriousness and necessity of scientific work in the exploitation of artificial intelligence.

Artificial Intelligence was first mentioned at the Dartmouth Seminar in 1956, when AI was defined as a system capable of distinguishing objects in photos and videos, performing

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translations, and analyzing the meaning and tone of texts in order to form a constructive response to a request. As we can see, at this stage of digital technology development artificial intelligence is already capable of performing as mentioned above, in addition, it has the ability to simulate communication, create works of art (music, paintings, episodes of TV shows), and construct a new mixed reality [6].

There are many points of view regarding the definition of AI: some scientists believe that artificial intelligence is a subject that imitates the brain activity of humans, while others believe that AI will become something more than humans [7]. According to V. A. Glukhikh, it acts as a support within everyday life, simplifying access to information, and also serves as an indirect cause of degradation [5, p. 87]. AI is able to perform clearly prescribed tasks, so it can easily handle the necessary processes in finance, business, logistics, medicine, but it is not capable of spontaneous activity inherent in the human brain. Because of this, AI is most often used in narrowly focused areas ("Weak AI"). "Examples of these types of AI are algorithms and systems for playing chess, speech and pattern recognition, loan approval processes, various electronic assistants, etc" [8, p. 126] Such products in the domestic market include Alice ("Yandex"), Oleg ("Tinkoff"), and among the Western ones - Siri ("Apple"). "Weak AI can only do what has been programmed into it.

"Strong AI is a hypothetical possibility to develop a self-learning machine algorithm, which will be able to solve any given intellectual tasks of any complexity [8, p. 126]. In theory, this system will be able to solve problems of different profile and complexity by deep analysis of big data by neural networks. Nowadays a lot of money is invested in the creation of full artificial intelligence for general purpose, the expected date of appearance is the second half of the 21st century.

There is also an idea that AI could become a subject capable not just of imitating certain human brain functions or performing tasks of varying severity, but of gaining intellectual independence ("artificial superintelligence"). The distinctive feature is that such a system will have unpredictable capabilities. At this stage, the idea of such a system is considered utopian, because the current AI serves as an information processing tool, is a set of models obtained by machine learning ("trial and error") to achieve specific goals. The more information AI receives for analysis, the more accurate the algorithm is, the easier the patterns are found, and given that it is embedded in many modern digital products, its performance becomes better. But we have to admit that machine learning is not present in all AI.

In general, artificial intelligence is divided into superficial and in-depth. In the first case, the system solves the task in the most efficient way, it takes into account the predetermined rules of the game, does not perform its own analysis (voice assistants, bots in computer games, "gallery" or "photo" apps in phones). In the case of the second option, AI uses neural networks to analyze large amounts of information in order to generate new knowledge, as opposed to superficial AI, which is only capable of processing data. For example, its capabilities include the ability to analyze and reproduce natural language (human speech), to recognize and sort images based on the smallest details, deep AI is used in medicine (able to detect cancer based on image analysis), and attempts are being made to implement it in modern autopilots [9].

The neural network is trained in several algorithms: with a teacher, without a teacher, with reinforcement [10]. In teacher-assisted learning, the model has a set of data with specific answers, which it matches with the information it receives. For example, a neural network receives an image of an animal, compares it to the available database, then gives an answer. Such a system requires a lot of reliable information. Teacher less learning model is a process in which the neural network independently analyses objects based on the available data, finding common properties and correlating between them. Examples include creating classifications of objects or adding complementary items to the shopping cart on marketplaces (a bracelet is automatically matched to a necklace, etc.). There is also a

combination of the above two methods of training, in which a neural network has data with marked and unmarked information (used in the analysis of X-rays). An illustrative method of combined learning is the generative adversarial network, which involves the opposition of two neural networks (generator and discriminator), each of them seeks to find a flaw in the other, so they improve, for example, a neural network that writes a diploma, and the second one, which seeks to determine: a human or an AI wrote the paper).

The last method is reinforcement learning (reach goal - get reward), in this case a neural network tries to find new strategies to solve a given task with the greatest benefit in the long term, in other words it tries to generate such a strategy that would maximize the utility of the end result (used in game industry).

Artificial Intelligence has many useful functions, but still the implementation of AI includes negative aspects, which are the issues of ethics, safety, and degradation of the human personality. According to R. Kurzweil, in the future there may be a situation of "technological singularity" in which scientific progress will reach such a high level that it will become inaccessible to human understanding [11]. "A new technological reality for the foreseeable future may be the development of a neurocomputer interface, through which the interaction between the brain and the computer will take place directly" [12, p. 419]. This innovation will cause socio-intellectual stratification, as part of the population, having access to resources, will get access to the improvement of their minds, while the other will remain limited, disadvantaged. This will lead to increased injustice, a revision of moral values, and then to oppression.

We need to consider the situation in which AI will become more perfect than humans, and this is considered an inevitable outcome, because the human brain is limited and does not have access to a full workload, while artificial intelligence is modernizing exponentially [13]. AI is devoid of emotions, its activity is based not on making moral decisions, but on calculations, so an outcome in which humanity itself becomes a threat to the balance of the world is likely. Therefore, a more rational solution for product developers using AI would be to keep it as a support agent [14].

Digital technologies simplify human life, give unlimited access to information, in some cases even deprive the individual of the opportunity to realize it in a full way, so the brain perceives this data superficially, forms a consumer attitude to all aspects of life, in which there is no meaningfulness, hence, there is no life itself. According to E. Fromm, "the more a person has, the less he is attracted to active efforts" [15]. For this reason, the active introduction of AI and digital technologies is already becoming the cause of degradation of the human personality, who does not seek knowledge, but desires to possess it [16]. The individual does not delve into the information, does not try to penetrate to the deeper essence to get his own understanding, but only becomes a kind of storage with a lot of facts without meaning. "For a person of the existential type the main thing is to deepen knowledge, for a person of the possessive type the main thing is to know more" [17]. In this regard, the widespread introduction of AI may cause the degradation of the human brain, and personality in particular.

2 Methods

Qualitative and quantitative methods of analysis were used in this research. In order to identify the attitude of Kazan youth towards artificial intelligence and its rapid implementation in society, a focus group (n=10) consisting of people of different social strata, ages, professions and views was gathered, which helped to identify risks and concerns about the problem discussed.

A sociological survey was also conducted, which made it possible to collect relevant data within the framework of digital socialization and digital competencies of Russian youth (n=2206).

3 Results and discussion

According to the majority of informants, AI at this stage of development is solely a support function for professional, daily living, educational and creative tasks [18, 19]. It cannot replace humans, but it is already transforming the usual perception of life around the world. "AI is something that is able to analyse a huge flow of information and, based on this information, learn, make predictions and conclusions [20]. AI has already greatly changed the world in many areas because it is much more capable than humans. However, I do not think that AI can completely replace humans in everything (informant 1, political scientist); AI is a software product that performs an imitation of human thinking. Introducing AI into human life is only a matter of time. AI will be used as a tool to perform the routine tasks of the creative professions as well as a powerful tool for learning." (Informant 2, programmer) But not all informants have a full understanding of the essence of AI. "AI - I don't even know, an advanced computer program (informant 3, lawyer); something to do with computers, with technology, attempts to transfer some human thinking capabilities to a machine so that it generates a stream of thoughts like a human." (informant 7, sociologist)

On the question of AI-related technologies, all respondents mentioned the currently popular ChatGPT, which is capable of writing high-quality texts, having conversations, and producing excellent results when asked intelligently; Deepfake, which allows you to impose certain images and videos, to animate them, but its activity should be limited, as it is used to create pornographic material with celebrities, fake news, etc. "AI training has been used extensively in games. OpenAI worked in Dota 2, which showed that even in such a complex game, AI is much stronger than humans." (informant 1, political scientist) Under given game conditions, AI is already superior to humans because it is devoid of emotional components and does not make mistakes when performing specific tasks. In the game industry, the AI is purposefully simplified so that humans can beat it, otherwise there will be no enjoyment from the gameplay.

Programs that create scientific papers and art paintings have recently gained popularity. "Chat bots, music creation, text writing, graphics (informant 5, foreign regionalist); GPT can write thesis papers, create pictures, crack passwords." (informant 7, sociologist) Although there is a deeper application, which is reflected in the machine's ability to write a book that fully describes the author's idea with various elaborate story lines and branches. In addition to the automation of payments and other transactions, bots-assistants are actively being introduced in the financial sector, which not only provide reference material regarding the terms of transactions, commission, payment of taxes ("support service"), but also form a financial strategy, a stock portfolio. "The chatbots collect information about their clients, their preferences, the financial instruments they use, and then offer structured products, rebalancing of the stock portfolio, etc." (Informant 4, financial analyst) In addition, within online shopping, where AI is actively used to promote products and services (selection of complementary products, recommendations, etc.), there is already a trend toward citizen interest in using marketplaces: 49.3% of respondents regularly shop online and 39.2% do so from time to time.

Table 1. Purchasing at marketplaces (Ozon, Wildberries, Yandex Market, Sbermegamarket, KazanExpress, Aliexpress, etc.)

		Frequency	Percentage	Valid percentage	Accumulated Percentage
Valid	Never	79	3.6	3.6	3.6
	It was only once	174	7.9	7.9	11.5
	From time to time	865	39.2	39.2	50.7
	Regularly	1087	49.3	49.3	100.0
	Total	2205	100.0	100.0	
Missing	System	1	0.0		
Total		2206	100.0		

Among the positive aspects of the implementation of AI, informants highlight the improvement of production processes in specialized areas, simplification of work with information search, and categorization of objects. "Automation of complex processes requiring high qualifications in narrow specialties, transformation/reduction in some professions." (informant 2, programmer) The respondents express multidirectional positions regarding the negative points. According to the informants, the problem is not with AI itself, but with who will use it. "I would point out that the positives and negatives depend on people using it. Personally, I don't see any negatives if you look at it in the abstract, but if you look at individual points, I would point out the social media, where AI is used to hold users who are losing their space in time." (Informant 1, political scientist) In this case, the implementation of AI in digital products may be the cause of online escapism, the loss of interest in offline life, the blurring of the virtual and the real. In addition, the widespread use of AI would later become a threat to digital security that could escalate into the real thing [21-30]. "Can mine data, crack passwords, expose personal data, and very quickly (by a matching method) ...it can lead to increased criminal activity, blurring the lines between the personal and the public." (informant 7, sociologist).

The percentage of users of data storage services is growing: 37.4% of respondents use them regularly and 37.5% from time to time. In this regard, it is necessary to draw the attention of Internet users to the importance of improving digital literacy, because AI easily finds the necessary data, because most users of various digital products naively assume that cloud services are strictly confidential, in practice this is not the case.

Table 2. Usage of cloud storage services (Yandex Disk, Google Drive, OneDrive, DropBox, iCloud)

		Frequency	Percentage	Valid percentage	Accumulated Percentage
Valid	Never	273	12.4	12.4	12.4
	It was only once	281	12.7	12.7	25.1
	From time to time	828	37.5	37.5	62.6
	Regularly	824	37.4	37.4	100.0
	Total	2206	100.0	100.0	

We should also mention voice assistants, which collect information about their users on a daily basis (a threat to data security). The percentage of respondents willing to use assistants for everyday tasks is growing as well (from time to time - 36.1%, regularly - 17.5%).

Table 3. Usage of a voice assistant (Alice, Marusya, Siri, Oleg, etc.) for everyday tasks

		Frequency	Percentage	Valid percentage	Accumulated Percentage
Valid	Never	626	28.4	28.4	28.4

	It was only once	399	18.1	18.1	46.5
	From time to time	796	36.1	36.1	82.5
	Regularly	385	17.5	17.5	100.0
	Total	2206	100.0	100.0	

According to informants, AI is being implemented most in areas that are related to medicine [31-33], robotics [34-36], information security [37], industry [38], digital products (social media, etc.), even IT [39]. "Medicine, replacing people in any industry - I think those two areas should be primary (informant 1, political scientist); oddly enough IT." (informant 2, programmer) Some informants believe that the professions will not disappear, but only undergo a transformation. "The professions will not be replaced, AI will take over a lot of tasks, which will make the work easier, for example, for accountants, who are considered representatives of a vanishing profession, but in fact their work has become more complicated because they need to learn to interact with new technologies." (informant 4, financial analyst) Others emphasize the importance of the creative environment for human life, this area should not be touched by AI [40]. "Partly, but because of the lack of creativity so far in AI, it is not a big threat to the profession I am in...AI is devoid of creativity itself, it imitates it (informant 5, foreign regionalist); I believe that all creative professions should be left to humans and decision making should be left to humans alone." (informant 1, political scientist) Some of the informants think otherwise; in their opinion, AI can replace a large range of professions, which include couriers, translators, waiters, drivers, call center workers, artists, designers, teachers, and, in some genres, journalists [41-44]. It is hard to disagree with this, because part of the listed activities, which millions of people are engaged in, does not always require complex intellectual input, so superficial AI can handle them. When it comes to word processing, there are already effective AI-enabled translators that offer contextual interpretation (DeepL Translate). "The active development of AI contains quite a few threats. One of the most obvious is job losses. For example, if AI starts to be used massively in the media, there will simply be no jobs left for journalists, editors, and correspondents. Perhaps only one person per newsroom will be required, and the rest will be handled by AI." (Informant 6, journalist) But you have to keep in mind that the quality of the written material and the art of the word is not yet accessible to AI. At the moment the AI is able to reproduce short news stories and even some media use this method, but it is still far from being able to write large texts full of analysis, various proofs and arguments.

Interviewees whose occupation involves processing data, collecting information about consumer preferences, feel anxious about their future employment. "Yes, I do. My profession is closely related to the Internet and various algorithms, in which AI will dominate humans for the foreseeable future (informant 8, marketer); the strongest influence is social networks. Now it is obvious that many social networks use algorithms that feed the user the content they would like to see, even ads are tailored to the user, so the work of marketers is becoming less in demand." (informant 9, public relations specialist)

The implementation of AI also raises concerns among interviewees, because this process may cause stagnation in the creative process, and people will rely on the program rather than their own ideas. "There could be some degradation of society, shifting previously familiar tasks to a machine" (informant 5, foreign regionalist); "People will stop creating something new, everyone will rely on AI. (Informant 2, programmer) It is also important to consider that algorithm failure can lead to catastrophic errors, such as in the judicial system in criminal cases where fates are decided, or in the military. "If you use AI as an assistive tool, there is no threat, but if you allow it to perform strategically important tasks, for example, in politics, medicine, i.e., AI cannot be held accountable, so people will suffer for mistakes." (Informant 4, financial analyst) One interviewee believes that AI is the strongest weapon of the 21st century, so the determining factor is the ownership of this tool by a limited number of people, which will inevitably lead to oppression. "Either the system of the world will change

completely, the relationship between people will be transformed for the better, or there will be war. What is the better side is a change in the whole system of relations and the understanding of the importance of man." (informant 1, political scientist)

To the question of whether AI can replace communication and, in some cases, romantic relationships, most responded positively, but under certain conditions. "Sure, 100%, because most people think in patterns and want to hear certain phrases that AI can easily be taught. Take the Alice station, which already knows how to speak in patterns and is constantly being improved (informant 1, political scientist); can, but only for people with low intelligence or those who can't interact with other people." (informant 2, programmer) The main focus is on people's basic communication needs, for the most part they just need attention, the illusion of dialogue, for people with more complex thinking, multiple levels of meaning, AI at this stage of its development is not able to give the expected response. "I believe that AI will be able to replace communication with real people, but only for a few days or even a few hours. In this case, romantic relationships are still out of the question. After a certain period of time, it becomes less interesting to talk to the AI, and you realize that there is nothing behind this conversation. (informant 6, journalist) An important fact is that AI is not currently capable of psychological feedback, and the key component of communication is emotion. In this regard, in the short term, artificial intelligence can replace dialogue with a real person, but in the long term it cannot. In this case, chatting on social networks is not taken into account, because it becomes more difficult to distinguish a bot from a human under such conditions.

4 Conclusions

If we consider this problem in terms of futurism, then AI will be able to replace humans in all stages of the work process, it will open a new stage of cultural development for civilization, as in the absence of the need to satisfy basic needs the issue of intellectual improvement will go to a different level, it is creativity that will become the determinant of human existence. But at the moment AI is able to perform a support function, simplifying the work with data, reducing the time spent on routine and heavy activities, i.e. it performs narrowly focused tasks, following a precise program, so it is still too early to talk about creating an artificial superintelligence. AI is a system that generates nothing new, it acts according to a script, while the human brain is capable of thinking beyond the conditions in which it finds itself.

Acknowledgments

References

1. V. Biryukov, E. Nemtchinova, T. Pavlova, A. Kagosyan, T. Avdeeva. Development of competence in the sphere of information security to achieve sustainable development. Journal of Law and Sustainable Development, **11**(1) (2023) doi: 10.37497/sdgs.v11i1.267
2. N. Klimovskikh, V. Sekerin, S. Makushkin, A. Kuzmicheva, M. Leontev, E. Kochetkov. Impact of human resource management on improving the innovation potential of an enterprise to achieve the principles of sustainable development. Journal of Law and Sustainable Development, **11**(1) (2023) doi: 10.37497/sdgs.v11i1.274

3. K.M. Al-Tkhayneh, H.A. Al-Tarawneh, E. Abulibdeh, M.K. Alomery. Social and Legal Risks of Artificial Intelligence: An Analytical Study. Academic Journal of Interdisciplinary Studies, **12**(3), 308–318 (2023) doi: 10.36941/ajis-2023-0079

4. I. Ignatieva, O. Saraeva, I. Zedgenizova, A. Zvezdina. The impact of the digital economy on employment and labour market transformations: The main trends. International Journal of Innovative Research and Scientific Studies, **6**(3), 507-513 (2023) doi: 10.53894/ijirss.v6i3.1554

5. V.A. Glukhikh, S.M. Eliseev, N.P. Kirsanova. Artificial Intelligence as a Problem of Modern Sociology. Discourse, **8**(1), 82-93 (2022) doi: 10.32603/2412-8562-2022-8-1-82-93

6. M.V. Vinichenko, G.Y. Nikiporets-Takigawa, A.A. Oseev, S.A. Makushkin. Trust of the generation z in artificial intelligence in the assessment of historical events. Relacoes Internacionais No Mundo Atual, **1**(34), 224-243 (2022) doi: 10.21902/Revrima.v1i34.5700

7. E. Kirillova, I. Otcheskiy, S. Ivanova, A. Verkhovod, D. Stepanova, R. Karlibaeva, V. Sekerin. Developing methods for assessing the introduction of smart technologies into the socio-economic sphere within the framework of open innovation. International Journal of Sustainable Development and Planning, **18**(3), 693-702 (2023) doi: 10.18280/ijsdp.180305

8. N.V. Gorodnova, Modeling the Development and Implementation of "Weak" and "Strong". Artificial Intelligence Systems: Socio-Economic Aspects, **12**(1), 123-140 (2022). doi: 10.18334/vinec. 12.1.113717

9. E.V. Chumakova, D.G. Korneev, T.A. Chernova, M.S. Gasparian, A.A. Ponomarev. Comparison of the application of FNN and LSTM based on the use of modules of artificial neural networks in generating an individual knowledge testing trajectory. Journal Européen des Systèmes Automatisés, **56**(2), 213-220 (2023). doi: 10.18280/jesa.560205

10. K. Belikova. Neural network training with a teacher, without a teacher, with reinforcement - what are the differences? Which algorithm is better? Neurohive (2018). Retrieved from: https://neurohive.io/ru/osnovy-data-science/obuchenie-s-uchitelem-bez-uchitelja-s-podkrepleniem/

11. R. Kurzweil, *The Singularity Is Near: When Humans Transcend Biology,* (Penguin Books, New York, 2005)

12. A.S. Sinitsa. Moral and ethical aspects of the theory of artificial intelligence. Young Scientist, **18**(98), 419-423 (2015)

13. H.O. Khogali, S. Mekid, The blended future of automation and AI: Examining some long-term societal and ethical impact features. Technology in Society, **73** (2023) doi: 10.1016/j.techsoc.2023.102232

14. M.V. Vinichenko, M.V. Rybakova, O.L. Chulanova, S.A. Makushkin, The social environment change under the influence of artificial intelligence the views of orthodox clergy and parishioners. European Journal of Science and Theology, **16**(5), 57-68 (2020)

15. E. Fromm, *The Art of Being* [translated from English by S. Skvortsov], (AST Publisher, Moscow, 2022)

16. J. J. Hernández García de Velazco. Sociedades del conocimiento y ciencia abierta en la nueva normalidad. Jurídicas Cuc, **18**(1), 1-4 (2022)

17. E. Fromm, *To have or to be*? [translated from German by E. Telyatnikova], (AST Publisher, Moscow, 2022)

18. S.E. Shishov, S. Yu, N.B. Lyakhova, S. Pivneva, D.M. Kapustina, P.A. Arkatov, Digitalization Policy Influence: Implementation of Mobile Learning in the University Educational Process. Webology, **18**(Special Issue), 687-699 (2021)

19. E.A. Kirillova, T.E. Zulfugarzade, O.E. Blinkov, O.A. Serova, I.A. Mikhaylova, Prospects for the development of legal regulation of digital platforms, Legal Cuc, **18**(1), 35–52 (2021) doi: 10.17981/juridcuc.18.1.2022.02

20. J. Huang, S. Saleh, Y. Liu, A Review on Artificial Intelligence in Education. Academic Journal of Interdisciplinary Studies, **10**(3) (2021) doi: 10.36941/ajis-2021-0077

21. A. Gurinovich, M. Lapina, D. Kazantsev, A. Lapin, Problems of legal regulation of the risks of using robotic and infocommunication technologies from the point of view of information security, Revista Juridica, **1**(73), 805-830 (2023) doi: 10.26668/revistajur.2316-753X.v1i73.6277

22. V.A. Tsvyk, I.V. Tsvyk, Sociological Problems of the Development and Application of Artificial Intelligence. RUDN Journal of Sociology, Series: Sociology, **22**(1), 58-69 (2022)

23. M.R. Safiullin, E.M. Akhmetshin. Digital transformation of a university as a factor of ensuring its competitiveness. International Journal of Engineering and Advanced Technology, **9**(1), 7387-7390 (2019) doi:10.35940/ijeat.A3097.109119

24. O. Saginova, N. Zavyalova, A. Kondratieva, T. Shipunova. Do universities use competitiveness indicators in their development programs? an evidence from Russia. Journal of Applied Economic Sciences, **13(1),** 123-134(2018).

25. A.I. Boginsky, L.S. Zelentsova, A.I. Tikhonov. Intelligent Monitoring as the Basis for Improving the Competitiveness of High-Tech Production. Lecture Notes in Networks and Systems. Springer, **115**, 436-443(2020). doi:10.1007/978-3-030-40749-0_52

26. V. Stroev, A. Sazonov, A. Tikhonov, D.F. Arbeláez Campillo, Methodology for Creating and Conducting Research on Digital Twins of Transformers at the Stage of Research Work. Journal of Theoretical and Applied Information Technology, **101(5),** 1880-1886(2023).

27. R. Kamaeva, T. Kvasnikova, M. Egorova, L. Kashapova. Problems of teaching students with special needs | Problemas para enseñar a estudiantes con necesidades especiales. Opcion, **35**(Special Issue 23), 563–580(2019).

28. I. Abdullayev, I. Begishev, Y. Limareva, H. Hajiyev, A. Yumashev, N. Prodanova. Impact of international migration on the internal security of the state. Migration Letters, **24(2),** 38-50(2023).

29. V.Yu Karpov, O.G Rysakova, D.M. Pravdov, O.A. Razzhivin. Efficiency of independent physical exercises in university students in remote format. Teoriya i Praktika Fizicheskoy Kultury, **(7),** 38-40(2022).

30. R. Kamaeva, M. Zemsh, S. Gilmanshina, T. Galich. The effect of the leadership development model on high school students' leadership as a soft skill | Učinak modela razvoja vodstva na meku vještinu vodstva srednjoškolaca. Croatian Journal of Education, 2021, **23(3),** 877-902 (2021).

31. C. Gallese Nobile, Legal Aspects of the Use Artificial Intelligence in Telemedicine. Journal of Digital Technologies and Law, **1**(2), 314-336 (2023) doi: 10.21202/jdtl.2023.13

32. P.S. Gulyaeva, Medical Nanorobots in the Focus of Law, Journal of Digital Technologies and Law **1**(1), 89-122 (2023) doi: 10.21202/jdtl.2023.4

33. I. Abdullaev, N. Prodanova, M.A. Ahmed, E.L. Lydia, B. Shrestha, G.P. Joshi, W. Cho. Leveraging metaheuristics with artificial intelligence for Customer Churn Prediction in

telecom industries. Electronic Research Archive, **31**(8), 4443-4458(2023) doi: 10.3934/era.2023227

34. I. Begishev, Z. Khisamova, Technological, Ethical, Environmental and Legal Aspects of Robotics. E3S Web of Conferences **244**, 12028 (2021) doi: 10.1051/e3sconf/202124412028

35. D.I. Stepanova, I.Y. Andryushchenko, H.A. Hajiyev, O.M. Lizina. Technological stratification of the large business enterprises' development, Journal of Advanced Research in Law and Economics, **10**(4), 1084-1100 (2019) doi:10.14505/jarle.v10.4(42).10

36. Z. Khisamova, V. Vasyukov, From robotics technology to environmental crimes involving robots. E3S Web of Conferences **244**, 12029 (2021) doi: 10.1051/e3sconf/202124412029

37. I.I. Bikeev, D.D. Bersei, N.B. Nechaeva, Analysis of Russian Judicial Practice in Cases of Information Security. International Journal of Engineering Research and Technology, **13**(12), 4602-4605 (2020)

38. A.Yu. Bokovnya, I.R. Begishev, Z.I. Khisamova, Pressing Issues of Unlawful Application of Artificial Intelligence. International Journal of Criminology and Sociology, **9**, 1054-1057 (2020), doi: 10.6000/1929-4409.2020.09.119

39. V.A. Artamonov, E.V. Artamonova, Artificial Intelligence and Security: Problems, Delusions, Reality and Future, in Proceedings of the XXI National Scientific Conference "Russia: Trends and Prospects of Development: Yearbook", 17 December 2021, Moscow, Russia (2021)

40. V.N. Bobkov, M.V. Simonova, N.V. Loktyuhina, I.A. Shichkin, Peculiarities of unstable employment in the era of a digital economy from data of social media of Russia. In Advances in Intelligent Systems and Computing, (Springer Verlag), **908**, 235-243 (2020)

41. D. Denisova, E. Strandstrem, D. Nikolenko. Efficiency of Various Forms of Simulation Training in the Training of Medical Professionals. European Journal of Contemporary Education. **12**(3), 788-796(2023). doi: 10.13187/ejced.2023.3.788

42. Zs. Riczu, Recommendations on the Ethical Aspects of Artificial Intelligence, with an Outlook on the World of Work, Journal of Digital Technologies and Law, **1**(2), 498-519 (2023). doi:10.21202/jdtl.2023.21

43. O.E. Blinkov, N.I. Ogneva, A.S. Vrazhnov, N.V. Sergeeva, Artificial intelligence as a new category of civil law, Journal of Advanced Research in Law and Economics, **11**(1), 91-98(2020).

44. A.N. Pinchuk, D.A. Tikhomirov, On the interaction of man and artificial intelligence: a new social reality in the representation of Moscow students. Znanie. Understanding. Skill, **3**, 85-97(2019).