Вестник Тамбовского университета. Серия: Гуманитарные науки
2024. Т. 29. № 1 http://journals.tsutmb.ru/humanities/
Vestnik Tambovskogo universiteta. Seriya: Gumanitarnye nauki = Tambov University Review. Series: Humanities
2024, vol. 29, no. 1 http://journals.tsutmb.ru/humanities-eng/
ISSN 1810-0201 (Print) ISSN 2782-5825 (Online)

THEORY AND METHODS OF FOREIGN LANGUAGE TEACHING

Original article
https://doi.org/10.20310/1810-0201-2024-29-1-46-56

AI implications for vocational foreign language teaching and learning: new meaning

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Importance. AI rapidly and dramatically transforms reality, which poses a problem for the new generation of university graduates coming into profession. Social sciences and humanities majors are concerned about the future of their careers and uncertain of professional skills in demand. This perspective piece argues in favor of shifting to interdisciplinary approach in higher education, with emphasis on integrative content embracing special knowledge, foreign language contexts and pertinent AI-mediated settings. The underlying idea is that in educational contexts, AI cannot only focus on procedural aspects – teaching techniques and management tasks; it is essential to provide language learners with a new professional scope of reference, which means changed curriculums, revised content, and new professions.
Research Methods. The work relies on various qualitative methods of research: analysis of present day labour market in AI-mediated contexts of social sciences and humanities; analysis of literature covering the use of AI for foreign language teaching and learning; a descriptive and analytical method; methods of generalizing and systematizing the selected material; interpretive analysis. The materials include scientific works of Russian and foreign scientists and modern labor market data.
Results and Discussion. Labour market analysis makes it possible to discover skills essential to a new generation of specialists in social sciences and humanities. In this respect, arguments for updating the content of teaching the majors in question are provided, and a discipline with adequate integrative potential is named. The interdisciplinary approach is illustrated with AI-mediated foreign language contexts of social sciences and humanities as part of the updated integrative content of the discipline "Foreign Language" to be mastered by students.
Conclusion. The conducted research brings us to the idea that the discipline "Foreign Language" has a unique potential for preparing a new generation of graduates in social sciences and humanities underpinned by AI. Along with its traditional goal – developing a person's communicative competence, essential in digital settings, it has good prospects of integrating special subject know-

ledge and its language correlates, necessary for the effective operation of AI algorithms in such areas, as well as for developing the “linguo-cognitive dimension” of professional activity adequate to these conditions.

Keywords: social sciences and humanities, artificial intelligence (AI), integrative content, special knowledge, foreign language contexts

For citation: Aleynikova, D.V., & Yarotskaya, L.V. (2024). AI implications for vocational foreign language teaching and learning: new meaning. *Vestnik Tambovskogo universiteta. Seriya: Gumanitarnye nauki = Tambov University Review. Series: Humanities*, vol. 29, no. 1, pp. 46-56. (In Eng., abstract in Russ.) https://doi.org/10.20310/1810-0201-2024-29-1-46-56

ТЕОРИЯ И МЕТОДИКА ОБУЧЕНИЯ ИНОСТРАННОМУ ЯЗЫКУ

Научная статья
УДК 372.881.111.1
https://doi.org/10.20310/1810-0201-2024-29-1-46-56

Искусственный интеллект в профессионально ориентированном обучении иностранным языкам: новые смыслы

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Актуальность. Искусственный интеллект кардинально и высокими темпами трансформирует реальность, что создает трудности для нового поколения выпускников вузов, начинающих свой профессиональный путь. Студенты социально-гуманитарных направлений подготовки обеспокоены своим профессиональным будущим: они не уверены в том, какие профессиональные навыки и умения будут действительно востребованы на рынке труда. Обоснована актуальность междисциплинарного подхода, интегрирующего перспективные с точки зрения применения ИИ специальные предметные знания и иноязычные контексты профессии, осваиваемые обучающимися при получении высшего образования. В этой связи аргументируется точка зрения, в соответствии с которой в образовательных контекстах использование ИИ не может ограничиваться процессуальным аспектом обучения – технологическим инструментарием, решением управленческих задач; необходимо обеспечить формирование у обучающихся профессиональной картины мира, адекватной новым реалиям, что требует актуализации содержания обучения, пересмотра учебных планов, ориентированных на освоение новых профессий.
Методы исследования. Использованы качественные методы исследования: анализ современного рынка профессий, связанных с применением ИИ в социально-гуманитарной сфере; анализ литературы, посвященной использованию ИИ в обучении иностранным языкам; описательно-аналитический метод; методы обобщения и систематизации отобранного материала; интерпретационный анализ. Материалами исследования служат научные труды российских и зарубежных ученых, а также данные о состоянии современного рынка труда.

Результаты исследования. Анализ рынка труда позволяет определить ключевые компетенции, необходимые новому поколению специалистов в области социально-гуманитарных наук. В этой связи обоснована целесообразность актуализации содержания обучения студентов этих направлений подготовки, выявлена учебная дисциплина, обладающая соответствующим интегративным потенциалом. На примере дисциплины «Иностранный язык» раскрыта возможность применения междисциплинарного подхода, обеспечивающего освоение профессиональных иноязычных контекстов применения ИИ в социально-гуманитарной сфере.

Выводы. Проведенное исследование позволяет сделать вывод, что в подготовке нового поколения студентов социально-гуманитарного профиля, ориентированных на внедрение ИИ в их профессиональную область, дисциплина «Иностранный язык» обладает уникальным потенциалом. Наряду с традиционной целью – развитием коммуникативной компетенции личности, важной в условиях цифровой реальности, в рамках ее предметного поля вполне возможна интеграция специальных предметных знаний и их лингвистических коррелятов, необходимых для эффективной работы алгоритмов ИИ в таких областях, развития соответствующего этим условиям «лингво-когнитивного измерения» профессиональной деятельности.

Ключевые слова: социально-гуманитарные науки, искусственный интеллект (ИИ), интегративное содержание, специальные знания, иноязычные контексты

Для цитирования: *Алейникова Д.В., Яроцкая Л.В.* Искусственный интеллект в профессионально ориентированном обучении иностранным языкам: новые смыслы // Вестник Тамбовского университета. Серия: Гуманитарные науки. 2024. Т. 29. № 1. С. 46-56. https://doi.org/10.20310/1810-0201-2024-29-1-46-56

IMPORTANCE

More than 75 % of companies plan to implement AI technologies in the next five years, according to the World Economic Forum's Future of Jobs report addressed by 803 companies worldwide. In this regard, professional communities express serious concern. AI learns to solve more and more complex tasks, which means it becomes a significant factor of influence in the professional segment [1; 2]. Such changes are not in doubt, but their scale and specific directions for further development remain debatable issues. At the same time, it is obvious that a critical understanding and awareness of the possibilities of AI is a necessary minimum for successful entry into the professional field.

On the other hand, transformations of this kind allow us to talk about the emergence of new professions in the fields of social sciences and humanities. For instance, we find prompt engineers who specialize in developing, refining, and optimizing text prompts for AI [3]. The emergence of new professions is associated with the rise of generative AI and the need to train new tools to get accurate answers to human queries. The activity of new specialists is quite often connected with “text,” which is one of the key areas of study for specialists in foreign language acquisition.

Education 4.0, reflecting Industry 4.0, forms a new pedagogical approach to existing practices. However, modern scholars pay greater attention to the technological idea of the educational transformation than to the necessity of reviewing the actual learning and teaching content, which might aim at preparing students to human-machine communication.

In the current perspective paper, we would like to highlight that present day significant changes in society require a new approach to selecting the content for developing professional language identity capable of efficiently interacting with AI.

Overview: AI’s impact on education. The technological increase in the educational area has promoted the appearance of a growing body of academic literature on the impact of AI on education. We analysed the components from a scientific perspective to identify common trends in the educational sector. For the following purpose, we studied 31 research papers.

A steady rise in publications occurred from 2020 to 2023 due to the implementation and further development of generative AI. We employed the Google Scholar database for the search for desired articles with time-limited coverage between 2020 and 2023. The key phrase employed was "impact of AI on education" within the subject area of social sciences and humanities. The selected articles include systematic as well as empirical studies. The data search yielded 28 suitable articles after applying the search algorithm for the above-mentioned titles, abstracts, key phrases, and time-limited coverage. The aim of the provided research analysis was to identify spheres of greater attention in AIEd.

A number of studies are devoted to the use of AI by students when creating presentations, theses, and essays [4; 5], as well[1] as to the increasing use of plagiarism [6–7]. Special attention is to be paid to the studies related to Chatbots application for foreign language teaching [8]. It is noted that the current technological progress does not lead to the collapse of the educational system but requires the attention of teachers [9]. Further studies of the impact of ChatGPT on academic integrity contributed to the AI Identification Test. The results showed a relatively low level of AI detection. According to the results of the study, high school teachers were marginally more adept at differentiating between essays produced by ChatGPT and those of high school pupils. At the same time, teachers found it challenging to differentiate between "human" essays and AI ones [10].

It becomes obvious that the exclusion of AI is not the way-out for fighting against modern technologies. The opposite and reasonable approach concerns revisiting the new reality by developing AI literacy, which includes several key domains to consider:

– "AI awareness;
– ability to use it and harness its power;
– knowledge that anyone can use it (even students);
– critical thinking regarding AI Content;
– method used to create the Result;
– sources used to create the Result;
– biases that might exist within the system" [11].

The second group of studies deals with AI ethics in education [12–16]. The rise of AI makes modern scholars create substantial ethical frameworks for all members of the educational community. There is a widespread opinion that AI systems are to reflect common social norms. To ensure this component, it is relevant to shift focus to elaborating on ethical standards, safety precautions, and deeper human supervision [17–18]. Recent studies have proposed a thematic analysis of relevant ethical guidelines on AI in the area of education and generalized ethical principles for AI in education:

– "governance and stewardship;
– transparency and accountability;
– sustainability and proportionality;
– privacy;
– security and safety;
– inclusiveness;
– human-centered AIED" [16].

Personalised learning is another area in education where AI is being used. Such systems, also referred to as adaptive learning platforms or intelligent tutoring systems, are envisaged to help students and teachers by providing students with access to a variety of educational materials [19].

The construction of an individual educational trajectory aims at adapting the educational program to the student's abilities specifying and enriching the content of programs. Generative AI will greatly contribute to the creation of educational content (assessment materials, exercises, supplementary materials, collection of brief thematic summaries, scripts for video lectures and podcasts, optimization of online courses, generation of images with the necessary modifications). Simultaneously, in an interactive mode, it will be possible to create a sample of educational content at the student's current level. This will allow for the creation of continuous pathways for the development of subject-oriented

[1] *King M.R., ChatGPT.* A conversation on artificial intelligence, chatbots, and plagiarism in higher education // Cellular and Molecular Bioengineering. 2023. Vol. 16. № 1. P. 1-2. https://doi.org/10.1007/s12195-022-00754-8

interdisciplinary knowledge that are arranged in accordance with a particular profile [20].

It is necessary to note that matters concerning the role of AI in the teaching and learning process are much-disputed. It is regarded as having a triple role: *"a new subject* to replace the traditional subjects of the educational system; *a direct mediator* to connect multiple elements; and *a supplementary assistant"* [21]. Despite the fact that current studies reveal multiple roles of AI, the common trends demonstrate a comparatively low level of digitalization in the educational sector [22]. Moreover, it's getting apparent that AI's role in education is more about its administrative functions and solving a range of management tasks [23–26] than pure academic goals of learning and teaching [27].

The current state of using AI in higher education shows that it could be used in the following situations: education management – information support for the students by chatbots; automatic grading systems (based on the statistical text analysis considering the criteria provided); adaptive learning; and distance learning [13; 25; 28; 29], optimization of the teaching process [29]. Several attempts were made to categorize AI use in higher education, distinguishing four groups: prediction and profiling; assessment; personalized learning; and intelligent tutoring systems [30]. The analysis of the impact of AI on education revealed the following areas of study:

– Generative AI is used for creating teaching contents;
– Generative AI is used for creating students' works;
– AI is used for performing management and administrative functions;
– AI is used for individual/personalized learning;
– AI ethics;
– Plagiarism and cheating using AI.

In the field of foreign language education, the situation is typical of education in general. AI applications are mostly limited to the organization of the teaching and learning processes. Therefore, we find it essential to pay greater attention not to so-called technical or procedural aspects of AI application but to the teaching and learning content that is obviously to be altered concerning current contexts of professional communication and activity in the digital world.

RESEARCH METHODS

The work relies on various qualitative methods of research: analysis of present day labor market in AI-mediated contexts of social sciences and humanities; analysis of literature covering the use of AI for foreign language teaching and learning; a descriptive and analytical method; methods of generalizing and systematizing the selected material; interpretive analysis. The materials include scientific works of Russian and foreign scientists and modern labor market data.

RESULTS AND DISCUSSION

Discovering AI-mediated content of foreign language teaching and learning. In the digital world, professional communities have their territorial borders erased, putting forward skills, knowledge, and professional awareness. Such a reality is possible only for those specialists who have a high command of English, which is an inalienable part of being a modern professional in any field.

Nowadays, we are aware of a high demand for specialists in the field of IT. The second trend is the emergence of new professions related to AI – partially or completely of a social sciences and humanities' nature. We suppose that the analysis of the labour market using websites for job seeking will allow us to reveal and categorize such jobs. This labour market analysis will show the priority tasks and competencies to be achieved by those who have humanities background (Table 1). The highlighted professions are regarded as new ones. Some of them require no IT skills or only basic IT skills.

The analysis of the jobs helps us define several key competences that a modern specialist in social sciences and humanities should possess. It's important to highlight that such specialists

Table 1

Labour market analysis

Таблица 1

Анализ рынка труда

	AI Legal Editor	Language Specialist	Prompt Engineer	Linguistic Data Labelling Analyst
Description	AI Legal Editors are in charge of making sure that all content connected to the meeting point of AI and the legal sector is factually correct, expertly written, and follows accepted legal writing practises. A strong background in law, a deep interest in the most recent advancements in AI technology, as well as excellent editing and communication skills, are required of the perfect applicant, as well as the ability to edit and proofread legal and technological concepts in an understandable manner, this position also calls for a desire to collaborate with other team members[2]. AI Legal editors are to support major machine learning projects. They test AI capabilities to draft legal arguments, e-mails, and letters to opposing counsel. The important part of the job is assessing output against criteria[3].	Language specialists are talented writers, paralegals, legal assistants, and attorneys who support the AI project. Language experts are essential for improving the voice, coherence, and fluency of our AI models. In order to produce high-quality training data sets, analyse and improve grammar and syntax, and guarantee adherence to linguistic laws and conventions, language specialists work with a broad team of experts[4].	Prompt engineers create text-based prompts that are fed into the back end of AI tools so they can do things such as generate a blog post or sales email with the proper tone and accurate information. Frequently, prompt engineers don't need to write any technical code. However, they type instructions to the AI model to help refine responses[5].	Linguistic data analysts carry out natural language processing. The results provided by them allow machines to identify key information such as text parts, text tonality, text within images, PDFs and files, and classify proper nouns[6].

[2] Legal AI Editor. Job description. (2023). Available at: https://capd.mit.edu/jobs/law-school-ai-legal-ai-editor/ (accessed 20.04.2023).
[3] REMOTE – AI Legal Editor *OR* JD/Juris Doctor (Project). Job description. (2023). Available at: https://www.roberthalf.com/job/ridgefield-park-nj/remote-ai-legal-editor-attorney-jd-3-week-project/02940-0012717152-usen (accessed 10.07.2023).
[4] Language Specialist. Job description. (2023). Available at: https://www.roberthalf.com/job/new-york-ny/language-specialist/00157-0012730635-usen (accessed 09.07.2023).
[5] *Popli N.* The AI Job That Pays Up to $335K – and You Don't Need a Computer Engineering Background // TIME. Apr. 14, 2023. Available at: https://time.com/6272103/ai-prompt-engineer-job/ (accessed 29.04.2023).
[6] *Choudhary A.* Key Job Roles in the Upcoming Field of Data Labelling // AIM. Nov. 26, 2021. Available at: https://analyticsindiamag.com/data-labelling-a-promising-space/ (accessed 29.04.2023).

End of Table 1
Окончание таблицы 1

Requirements	– Strong research and analytical skills, with the ability to synthesize complex information into clear and accessible language; – Excellent verbal and written communication skills; – A deep interest and knowledge of AI and its applications in the legal industry; – Ability to thrive in a dynamic, high-pressure environment, to prioritize client matters and adapt to quick changes while remaining diligent through each task performed[7].	– Excellent writing skills; – Strong knowledge of grammar, syntax, and linguistic conventions; – Experience in creating training data sets and improving language quality in AI models is a plus; – Proficiency in answering free-form prompts and generating cohesive, accurate responses; – Familiarity with legal topics and the ability to provide specialized domain responses; – Excellent communication and collaboration skills; – Attention to detail and ability to work effectively in a fast-paced environment[8].	– "Discover, test, and document best practices for a wide range of tasks relevant to our customers; – Build up a library of high-quality prompts or prompt chains to accomplish a variety of tasks, with an easy guide to help users search for the one that meets their needs; – Build a set of tutorials and interactive tools that teach the art of prompt engineering to our customers; – Work with large enterprise customers on their prompting strategies"[9]. – "In-depth knowledge of algorithms, machine learning, and various AI models (knowing the history behind various AI models, what the limitations are, and having first-hand experience experimenting with how specific AI platforms function); – Ability to collaborate and communicate effectively"[10].	– Preferably with basic computer literacy and IT experience; – Comfortable to handle large data sets on a regular basis; – Ability to work on repetitive tasks efficiently and effectively with minimal errors; – Excellent communication; – Strong analytical skills and reasoning skills[11].

[7] REMOTE – AI Legal Editor *OR* JD/Juris Doctor (Project). Job description. (2023). Available at: https://www.roberthalf.com/job/ridgefield-park-nj/remote-ai-legal-editor-attorney-jd-3-week-project/02940-0012717152-usen (accessed 10.07.2023).
[8] Language Specialist. Job description. (2023). Available at: https://www.roberthalf.com/job/new-york-ny/language-specialist/00157-0012730635-usen (accessed 09.07.2023).
[9] Prompt Engineer & Librarian. Job description. (2023). Available at: https://jobs.lever.co/Anthropic/e3cde481-d446-460f-b576-93cab67bd1ed (accessed 09.07.2023).
[10] *Arrington K.* What is AI Prompt Engineering? Job Description & Key Responsibilities. Apr. 21, 2023. Available at: https://authenticjobs.com/what-is-ai-prompt-engineering-job-description/ (accessed 19.06.2023).
[11] *Choudhary A.* (2021). Key Job Roles in the Upcoming Field of Data Labelling. Available at: https://analyticsindiamag.com/data-labelling-a-promising-space/ (accessed 29.04.2023).

could have different educational backgrounds in social sciences and humanities (psychological, legal, cultural, archival, e.t.c.). However, the labor market analysis reveals that modern social sciences and humanities' professionals might have the following invariant skills and interests:

– strong research and analytical skills;
– strong writing skills;
– ability to synthesize complex information into clear and accessible language;
– excellent verbal and written communication skills;
– a deep interest and knowledge of AI (its history, trends, e.t.c.);
– ability to thrive in a dynamic, high-pressure environment, to prioritize client matters, and adapt to quick changes;
– good reasoning skills.

Optional but frequently mentioned are legal knowledge and basic coding skills.

In connection with what has been said, it should be noted that all the above-mentioned professional tasks are deeply connected with the text and include analysing it, deriving key structures and information, and its further classification. For such specialists, the role of the text, its meaning, and its hidden senses are regarded as central.

Therefore, we suppose that to bring up a modern professional it is essential to provide a learner with a new professional scope of reference, which means changed curriculums, revised content, and, most likely, new professions.

The second important question is which disciplines have the potential to provide such an opportunity [31]. As things stand, the core discipline present in all university curricula and capable of integrating the range of requirements for competences listed above is Foreign Language. The discipline could be conceptualized as Foreign Language for Special AI Purposes (advanced level), but in this case, it also needs transformation – thorough revision of the teaching and learning content embracing special knowledge, foreign language contexts and pertinent AI-mediated practices and settings. The interdisciplinary basis of the discipline may include foreign language teaching and learning within the AI discourse, studying AI history, trends, and problematic issues, as well as deep text analysis (basic labelling techniques included) and interpretation. Such a course of foreign language teaching and learning would emphasize the practical approach and encourage students' motivation; it will also help university graduates look to the future with confidence.

CONCLUSION

Technological progress affects all spheres of our life. Education is no exception. Education 4.0 opens new directions for many disciplines.

In this paper, we tried to look at modern trends in the field of social sciences and humanities, primarily AI-mediated practices and settings, discover their implications for the coming generations of university graduates, and select a discipline with the potential to embrace the underlying conditions and to meet the established range of requirements for competencies in demand. The discipline *Foreign Language for Special AI Purposes* (advanced level), due to the nature of language and the role of foreign languages in the modern world, has the required potential to prepare a new generation of graduates in social sciences and humanities underpinned by AI. Along with its traditional goal – developing a person's communicative competence, essential in digital settings, it has good prospects of integrating special subject knowledge and its language correlates, necessary for the effective operation of AI algorithms in such areas, as well as for developing the "linguo-cognitive dimension" of professional activity adequate to these conditions. It is sure to provide a learner with a new professional scope of reference mediated by AI, to teach one to address special discourse, solve profession-related language-focused problems – to make the progress of the field possible.

References

1. Fossen F.M., Sorgner A. (2019). *New Digital Technologies and Heterogeneous Employment and Wage Dynamics in the United States: Evidence from Individual-Level Data*. Bonn, IZA Publ., 49 p.
2. Frey C.B., Osborne M.A. (2017). The future of employment: how susceptible are jobs to computerization? *Technological Forecasting and Social Change*, vol. 114, pp. 254-280. https://doi.org/10.1016/j.techfore.2016.08.019
3. Shaji A.G., Baskar T. (2023). The impact of AI language models on the future of white-collar jobs: a comparative study of job projections in developed and developing countries. *Partners Universal International Research Journal*, vol. 2, no. 2, pp. 117-135. https://doi.org/10.5281/zenodo.8021447
4. Sweeney S. (2023). Who wrote this? Essay mills and assessment – considerations regarding contract cheating and AI in higher education. *The International Journal of Management Education*, vol. 21, issue 2, art. 100818. https://doi.org/10.1016/j.ijme.2023.100818
5. Ventayen R.J.M. (2023). ChatGPT by OpenAI: Students' viewpoint on cheating using artificial intelligence-based application. *SSRN*. February 23, 4 p. http://dx.doi.org/10.2139/ssrn.4361548
6. Dehouche N. (2021). Plagiarism in the age of massive Generative Pre-trained Transformers (GPT-3). *Ethics in Science and Environmental Politics*, vol. 21, pp. 17-23. https://doi.org/10.3354/esep00195
7. Dien J. (2023). Editorial: Generative artificial intelligence as a plagiarism problem. *Biological Psychology*, vol. 181, art. 108621. https://doi.org/10.1016/j.biopsycho.2023.108621
8. Sysoyev P.V., Filatov E.M. (2023). Chatbots in teaching a foreign language: advantages and controversial issues. *Vestnik Tambovskogo universiteta. Seriya: Gumanitarnye nauki = Tambov University Review. Series: Humanities*, vol. 28, no. 1, pp. 66-72 (In Russ.) https://doi.org/10.20310/1810-0201-2023-28-1-66-72, https://elibrary.ru/pxgztj
9. Malinka K. et al. (2023). On the educational impact of ChatGPT: Is artificial intelligence ready to obtain a university degree? *Proceedings of the 2023 Conference on Innovation and Technology in Computer Science Education*. New York, Association for Computing Machinery Publ., vol. 1, pp. 47-53. https://doi.org/10.1145/3587102.3588827
10. Waltzer T. et al. (2023). Testing the ability of teachers and students to differentiate between essays generated by ChatGPT and high school students. *Human Behavior and Emerging Technologies*, no. 1, pp. 1-9. https://doi.org/10.1155/2023/1923981
11. Anders B.A. (2023). Is using ChatGPT cheating, plagiarism, both, neither, or forward thinking? *Patterns*, vol. 4, issue 3, art. 100694. https://doi.org/10.1016/j.patter.2023.100694
12. Ashok M. et al. (2022). Ethical framework for artificial intelligence and digital technologies. *International Journal of Information Management*, no. 62, art. 102433. https://doi.org/10.1016/j.ijinfomgt.2021.102433
13. Hwang G.J. et al. (2020). Vision, challenges, roles and research issues of artificial intelligence in education. *Computers and Education: Artificial Intelligence*, vol. 1, art. 100001. https://doi.org/10.1016/j.caeai.2020.100001
14. Holmes W. et al. (2021). Ethics of AI in education: Towards a community-wide framework. *International Journal of Artificial Intelligence in Education*, vol. 32, pp. 504-526. https://doi.org/10.1007/s40593-021-00239-1
15. Sacharidis D. et al. (2020). Fairness and diversity in social-based recommender systems. *Adjunct Publication of the 28th ACM Conference on User Modeling, Adaptation and Personalization*. New York, Association for Computing Machinery Publ., pp. 83-88. https://doi.org/10.1145/3386392.3397603
16. Nguyen A. et al. (2023). Ethical principles for artificial intelligence in education. *Education and Information Technologies*, vol. 28, pp. 4221-4241. https://doi.org/10.1007/s10639-022-11316-w
17. Berendt B. et al. (2020). AI in education: learner choice and fundamental rights. *Learning Media and Technology*, vol. 45, issue 3, pp. 312-324. https://doi.org/10.1080/17439884.2020.1786399
18. Hagendorff T. (2020). The ethics of AI ethics: An evaluation of guidelines. *Minds and Machines*, vol. 30, pp. 99-120. https://doi.org/10.1007/s11023-020-09517-8
19. Akgun S., Greenhow C. (2022). Artificial Intelligence in Education: Addressing ethical challenges in K-12 settings. *AI Ethics*, vol. 2, pp. 431-440. https://doi.org/10.1007/s43681-021-00096-7

20. Konstantinova L.V., Vorozhikhin V.V., Petrov A.M. et al. (2023). Generative artificial intelligence in education: discussions and forecasts. *Otkrytoe Obrazovanie = Open Education*, vol. 27, no. 2, pp. 36-48. (In Russ.) https://doi.org/10.21686/1818-4243-2023-2-36-48, https://elibrary.ru/vpmizk
21. Xu W., Ouyang F. (2022). A systematic review of AI role in the educational system based on a proposed conceptual framework. *Education and Information Technologies*, no. 27, pp. 4195-4223. https://doi.org/10.1007/s10639-021-10774-y
22. Celik I. (2023). Exploring the determinants of artificial intelligence (AI) literacy: Digital divide, computational thinking, cognitive absorption. *Telematics and Informatics*, vol. 83, art. 102026. https://doi.org/10.1016/j.tele.2023.102026
23. Klos M.C. et al. (2021). Artificial intelligence – based Chatbot for anxiety and depression in university students: Pilot randomized controlled trial. *JMIR Formative Research*, vol. 5, no. 8, art. 20678. https://doi.org/10.2196/20678
24. Kumar V.S., Boulanger D. (2021). Automated essay scoring and the deep learning black box: How are rubric scores determined? *International Journal of Artificial Intelligence in Education*, vol. 31, pp. 538-584. https://doi.org/10.1007/s40593-020-00211-5
25. Ramesh D., Sanampudi S.K. (2022). An automated essay scoring system: a systematic literature review. *Artificial Intelligence Review*, vol. 55, pp. 2495-2527. https://doi.org/10.1007/s10462-021-10068-2
26. Uto M. et al. (2020). Neural automated essay scoring incorporating handcrafted features. *Proceedings of the 28th International Conference on Computational Linguistics*. Barcelona, International Committee on Computational Linguistics Publ., pp. 6077-6088. https://doi.org/10.18653/v1/2020.coling-main.535
27. O'Dea X., O'Dea M. (2023). Is artificial intelligence really the next big thing in learning and teaching in higher education? *Journal of University Teaching and Learning Practice*, vol. 20, no. 5. pp. 1-19. https://doi.org/10.53761/1.20.5.05
28. Yufeia L. et al. (2020). Review of the application of artificial intelligence in education. *International Journal of Innovation, Creativity and Change*, vol. 12, issue 8, pp. 548-562. https://doi.org/10.53333/IJICC2013/12850
29. Sysoyev P.V. (2023). Artificial intelligence in education: Awareness, readiness and practice of using artificial intelligence technologies in professional activities by university faculty. *Vysshee obrazovanie v Rossii = Higher Education in Russia*, vol. 32, no. 10, pp. 9-33. (In Russ.) https://doi.org/10.31992/0869-3617-2023-32-10-9-33, https://elibrary.ru/tzytkm
30. Zawacki-Richter O. et al. (2019). Systematic review of research on artificial intelligence applications in higher education – Where are the educators? *International Journal of Educational Technology in Higher Education*, vol. 16, pp. 1-27. https://doi.org/10.1186/s41239-019-0171-0
31. Yarotskaya L.V., Aleinikova D.V. (2023). Reviewing learning and teaching content in the scope of artificial intelligence: For humanities and social sciences majors. *Vestnik Rossiiskogo universiteta druzhby narodov. Seriya: Psikhologiya i pedagogika=RUDN Journal of Psychology and Pedagogics*, vol. 20, no. 1, pp. 145-162. (In Russ.) http://doi.org/10.22363/2313-1683-2023-20-1-145-162, https://elibrary.ru/endlny

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Information on the conflict of interests: authors declare no conflict of interests.

Received 22.11.2023
Approved 20.12.2023
Accepted 17.01.2024

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Информация о конфликте интересов: авторы заявляют об отсутствии конфликта интересов

Поступила в редакцию 22.11.2023
Одобрена после рецензирования 20.12.2023
Принята к публикации 17.01.2024