Submission date: 21 of August 2025 **Acceptance date:** 8 of September 2025 **Publication date:** 16 of February 2026

ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION: STRATEGIES TO OPTIMIZE STUDENT USE

INTELIGENCIA ARTIFICIAL EN LA EDUCACIÓN SUPERIOR: ESTRATEGIAS PARA OPTIMIZAR SU USO ESTUDIANTIL

Renat Latypov[1*]
E-mail: RLatypov@kpfu.ru
ORCID: https://orcid.org/0009-0001-4283-2302
Anzhelika Borisova[2]
E-mail: Borisova_ay@mail.ru
ORCID: https://orcid.org/0000-0002-7731-5268
Irina Pinegina[3]
E-mail: 000238@togudv.ru
ORCID: https://orcid.org/0009-0008-0819-8425
Ekaterina Belova[4]
E-mail: evprokopeva@sfedu.ru
ORCID: https://orcid.org/0000-0002-0683-137X
Alisa Tuzlukova[4]
E-mail: putrya@sfedu.ru
ORCID: https://orcid.org/0000-0002-1968-345X
[1] Kazan (Volga Region) Federal University. Kazan, Russia.
[2] Moscow State University of Civil Engineering. Moscow, Russia.
[3] National Pacific University, Khabarovsk, Russia.
[4] Southern Federal University. Rostov Oblast, Russia.
*Corresponding autor

Suggested citation (APA, seventh ed.)

Latypov, R., Borisova, A., Pinegina, I., Belova, E., & Tuzlukova, A. (2026). Artificial intelligence in Higher Education: strategies to optimize student use. ***Revista Conrado, 22***(108), e5248.

ABSTRACT

Today, the integration of artificial intelligence into higher education is playing a crucial role in transforming the learning process and managing students' time. AI tools, such as ChatGPT, can significantly enhance the efficiency of learning, saving time and increasing convenience. However, there is a risk that students may lose engagement in learning, as well as their ability to think critically and solve problems independently. Hence, there is an active debate in the academic community about what possibilities, rules, and norms need to be introduced into the educational process to optimize students' work with AI tools. The purpose of this study was to develop recommendations for universities on optimizing students' use of AI tools in the learning process. The research methodology included an anonymous quantitative online survey of 161 students (the CAWI method). The results demonstrated a high prevalence of ChatGPT use among students, with both positive effects (increased learning efficiency) and potential risks (decreased autonomy and critical thinking) highlighted. The data were used to develop recommendations for universities on how to effectively integrate AI tools into the educational process while minimizing the associated risks.

Keywords:

Education, ChatGPT, Curriculum, Critical thinking, Students' Motivation.

RESUMEN

En la actualidad, la integración de la inteligencia artificial en la educación superior está desempeñando un papel crucial en la transformación del proceso de aprendizaje y la gestión del tiempo de los estudiantes. Las herramientas de IA, como ChatGPT, pueden mejorar significativamente la eficiencia del aprendizaje, ahorrando tiempo y brindando mayor comodidad. Sin embargo, existe el riesgo de que los estudiantes pierdan el interés en el aprendizaje, así como su capacidad de pensamiento crítico y de resolución de problemas de forma independiente. Por lo tanto, existe un debate activo en la comunidad académica sobre las posibilidades, normas y directrices que deben implementarse en el proceso educativo para optimizar el uso de las herramientas de IA por parte de los estudiantes. El propósito de este estudio fue desarrollar

recomendaciones para las universidades sobre cómo optimizar el uso de las herramientas de IA por parte de los estudiantes en el proceso de aprendizaje. La metodología de investigación incluyó una encuesta cuantitativa en línea anónima a 161 estudiantes (método CAWI). Los resultados mostraron una alta prevalencia del uso de ChatGPT entre los estudiantes, destacando tanto los efectos positivos (mayor eficiencia en el aprendizaje) como los riesgos potenciales (disminución de la autonomía y el pensamiento crítico). Los datos se utilizaron para desarrollar recomendaciones para las universidades sobre cómo integrar eficazmente las herramientas de IA en el proceso educativo, minimizando al mismo tiempo los riesgos asociados.

Palabras clave:

Educación, ChatGPT, Currículo, Pensamiento crítico, Motivación estudiantil.

INTRODUCTION

Artificial intelligence, as a cutting-edge innovation, plays a key part in transforming learning processes, offering new opportunities to students, teachers, and educational systems (Shaimieva et al., 2024).

To unlock the full potential of AI in higher education, it is important to keep using the existing instruments and to research and develop new methods and strategies of AI integration (Golubtsova et al., 2025). Universities need to recognize the growing importance of AI in everyday life and integrate it into the educational process to teach students to use these tools properly in their work and everyday life (Kirillova et al., 2024; Koltyapin & Chesnokova, 2024). It is crucial to understand the practical aspects of introducing AI into the educational process, anticipate future trends, analyze the ethical consequences (Okishev, 2024), and adapt curricula to new technological realities (Gazizova et al., 2025).

Researchers note that AI innovations have a wide range of functions in the field of education, including time saving, supporting teachers' work, and assisting in data analysis. As an objective tool, AI is ideal for evaluating students' performance without involving emotions that may affect the adequacy of the assessment. AI effectively transmits and analyzes information collected using various tools and identifies new and effective learning pathways (Andreeva & Pronina, 2024; Kooli, 2023).

AI is now capable of generating scientific articles following its own recommendations and even successfully passing the Wharton MBA exam and the United States Medical Licensing Examination (USMLE). Nonetheless, this tool has its limitations, ones that its creators themselves warn about. Responses from AI may be incorrect or biased; for example, a chatbot may cite nonexistent articles (Mamedova et al., 2025). However, the biggest controversy revolves around the fact that since AI tools based on large language models rely on an enormous amount of texts already available on the Internet, it is difficult to determine the originality and accuracy of the generated responses (Kuznetsov, 2024).

In this context, researchers are raising questions such as how AI technology is going to affect independent writing in academic education (Ud Duha, 2023), what AI ultimately means for training and universities, and how the use of AI is going to affect students' motivation (Abdullayev et al., 2024) and engagement in learning.

In a study by Malmstrom et al. (2023), the majority of respondents (students) agreed that the chatbot was more likely to facilitate the learning process and contribute to its effectiveness. They were also convinced that it would impair critical thinking, creativity, and autonomy and cause a spike in academic dishonesty. A study by Rahman & Watanobe (2023) involving 1,000 respondents of different nationalities who got a bachelor's or master's degree in the distance, in-person, or hybrid format found 43% of the respondents using ChatGPT and similar AI tools in the learning process and as much as 50% using AI to write papers and exams. Importantly, 61% of the surveyed students agreed that AI tools will become the new norm in the education system.

The integration of digital competencies in higher education is a key factor in optimizing students' use of artificial intelligence tools. According to Acosta-Servín et al. (2025), the development of digital competencies not only enables efficient management of technological platforms but also strengthens students' autonomy and critical thinking skills. The authors emphasize that pedagogical innovation, supported by planning and assessment strategies adapted to the digital context, is essential to ensure that technology complements rather than replaces cognitive learning processes. In this way, tools such as ChatGPT can enhance learning efficiency and personalization without compromising students' holistic development.

Furthermore, Chávez-Cárdenas et al. (2025) point out that artificial intelligence applied to digital educational environments transforms the way students interact with knowledge and allows learning to be adapted to individual needs. The authors also highlight the importance of establishing norms and best practices to regulate the use of these tools, minimizing associated risks such as technological dependence or a reduction in critical thinking.

The study further underscores that AI can be effectively integrated into educational platforms, promoting more accessible, efficient, and personalized learning, provided that ethical and pedagogical frameworks guide its implementation.

These sources provide solid theoretical support for developing recommendations for universities, combining both pedagogical and technological perspectives. It is evident that a strategic and regulated use of artificial intelligence can improve learning efficiency and quality, as long as students' autonomy, critical thinking, and digital competencies are simultaneously promoted.

Debates about the use of AI tools like ChatGPT in education continue. While some advocate for adapting to new technologies and developing regulatory policies for their use, others object to any restrictions on their use (Volosova, 2024).

Our literature review shows a lack of comprehensive understanding of how AI affects student learning at different levels of higher education. This points to the need for a more comprehensive approach that takes into account different aspects of AI integration into teaching and learning at universities (Zharova, 2024). This gap in research is further underscored by the growing importance of AI in higher education and the resulting need to understand the full extent of its impact on students, including both the benefits and potential risks or challenges associated with its continued use. Research bridging this gap may help to better tailor curricula to the needs of modern students and develop more effective strategies for using AI in higher education (Kryucheva & Tolstoukhova, 2023).

Thus, the purpose of this study was to develop recommendations for universities on optimizing students' use of AI tools in the learning process, considering the impact of these tools on learning.

MATERIALS AND METHODS

The study used a mixed approach, combining quantitative and qualitative methods to simultaneously obtain statistically significant findings and gain a deeper understanding of the problem. Given that the focus of the study was on the use of AI tools, ChatGPT was chosen as a representative example. ChatGPT is a breakthrough technology based on the GPT-3.5 model, which debuted at the end of 2022. This generative AI chatbot gives instant personalized responses to user queries, which significantly speeds up the learning process by eliminating the need for time-consuming information searches. In particular, this tool can be used by students to prepare for exams, understand complex concepts, develop projects, and do homework. However, the simplified access to information through ChatGPT raises concerns that students will eventually lose motivation to think and study independently and to critically analyze the information they are given.

The primary data collection method in our study was a quantitative survey. An anonymous online questionnaire was conducted following the Computer-Assisted Web Interviewing (CAWI) technique. The questionnaire included both open and closed questions, the latter including dichotomous (with yes/no answers), multiple choice, and Likert scale items. A standard 5-point Likert scale was chosen to assess student attitudes towards the use of AI apps by quantifying the degree of their agreement with a number of statements. The values on the scale were interpreted as follows: 1 — "Definitely no"; 2 — "Rather no"; 3 — "Not sure"; 4 — "Rather yes"; 5 — "Definitely yes." This scale was chosen due to its wide prevalence in social studies and its ability to quantitatively assess subjective opinions.

Data collection was carried out from April 25 to May 10, 2025. The survey was conducted at six Russian universities, and students' participation was completely voluntary and anonymous. The survey was completed by 161 students. The quantitative data were processed using descriptive statistics in MS Excel, including the shares of responses, percentage distributions, and average values for key indicators. This data processing revealed the main trends and numerical estimates of students' perception of AI tools, which were then used to develop recommendations for universities.

Sample

The study was conducted on a random sample of the general population of university students, comprising 161 people. Table 1 provides a characteristic of the sample structure.

Table 1. Sample structure.

Variable	Characteristic
Form of training	Full-time — 88.2% (142) Part-time — 11.8% (19)
Year of study	1st — 15.8% (25) 2nd — 31.9% (51) 3rd — 40.9% (66) 4th — 7.4% (12) 5th — 4% (7)
Age	<20 — 8% (13) 20-24 — 77.4% (125) 25-29 — 12.4% (20) >30 — 2.2% (3)
Gender	Male — 48.9% (79) Female — 51.1% (82)

RESULTS AND DISCUSSION

The first question in the survey reading "Have you ever used ChatGPT or other AI tools for educational purposes?" received 92.5% positive responses (149 people), and only 7.5% responded negatively.

The second stage of the study focused on the identified subset of 149 respondents — those who had used ChatGPT or other AI tools for educational purposes.

Further analysis of the survey results reveals great variation in the frequency of ChatGPT use for educational purposes. The largest portion of respondents, amounting to 33% of the sample, reported using this tool 2-3 times a week. These results are summarized in Figure 1.

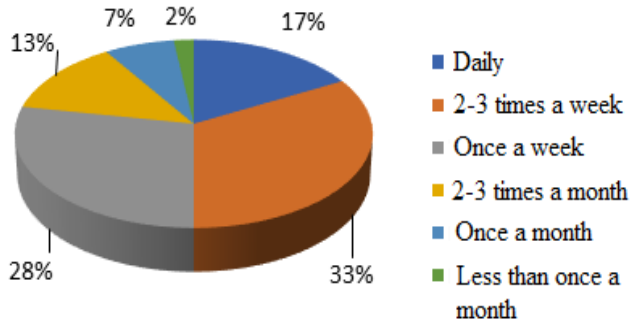

Figure 1. Frequency of students' use of ChatGPT

Overall, students use ChatGPT and similar AI tools for a variety of purposes Figure 2. Notably, 79 respondents (53%) mentioned using the chatbot when writing essays, reports, and term papers. The overwhelming majority (78%) highlighted completing assignments and solving tasks as their reasons to use ChatGPT, 51% stated they used it to search for information, and 45% used the chatbot as a language translator.

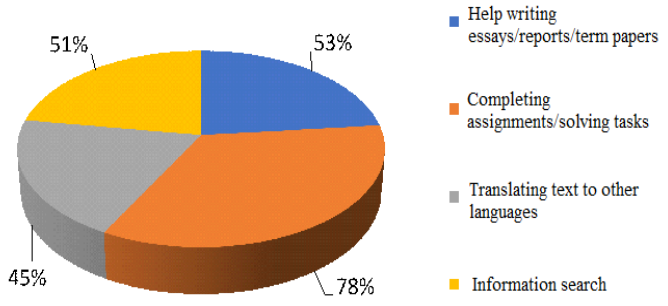

Figure 2. Most popular educational purposes for which students use ChatGPT

Students' answers to the question about the manner in which they most often use the responses given by ChatGPT are presented in Figure 3.

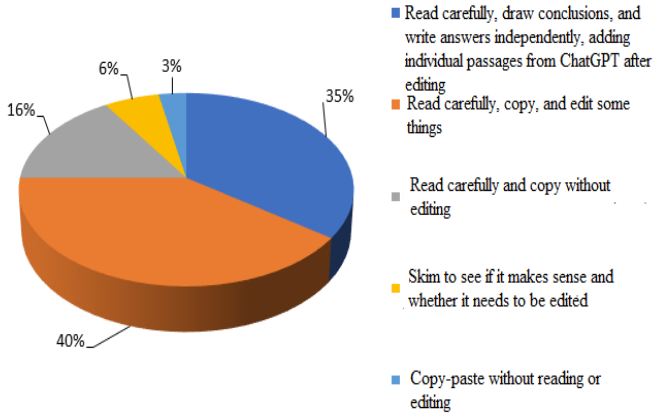

Figure 3. The use of responses written by ChatGPT

The study also examined the effects of ChatGPT use on student engagement. Half of the respondents admit that their engagement declined slightly after starting to use AI tools. The results are summarized in Figure 4.

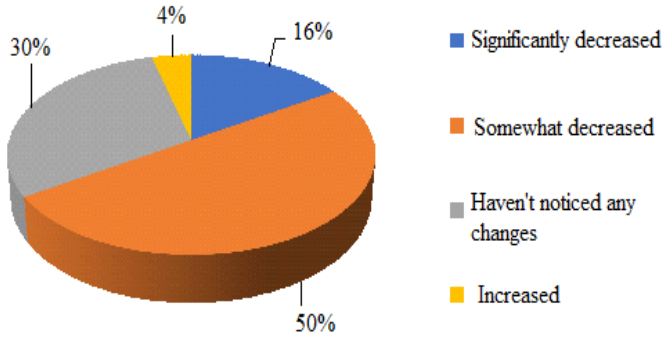

Figure 4. Changes in students' engagement in learning after starting to use ChatGPT

Figure 5 shows the distribution of answers to the question, "Do you think that the ease of access to information through AI can impede the independent search for knowledge?"

The most frequently chosen answer was 4 (42%), which shows significant concerns about the impact of AI on independence in learning. Lower estimates (1 and 2) account for 19% of responses, meaning that one in five respondents do not see a major threat in the ease of getting information with AI. The average response to this question is 3.63.

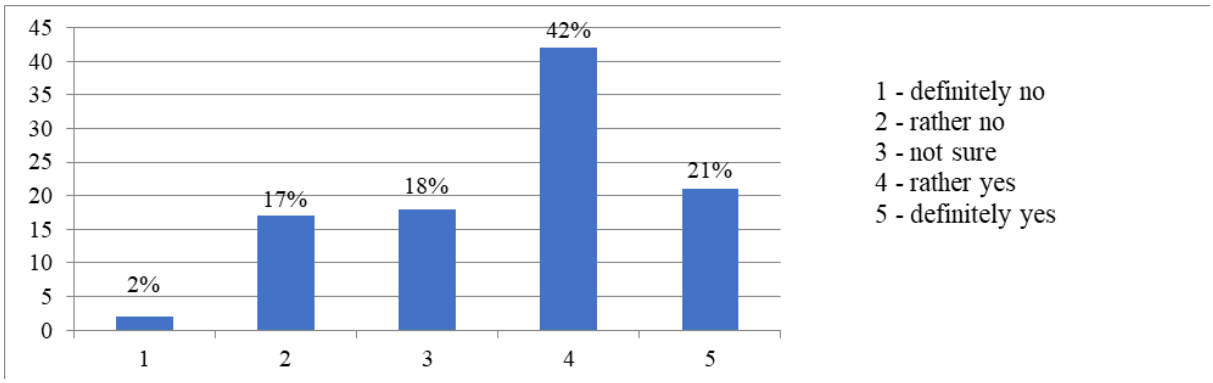

Figure 5: Assessment of the inhibition of independent search for knowledge due to the ease of getting information through AI.

Figure 6 shows the distribution of answers to the question "Do you think that overreliance on AI in the learning process can lead to a loss of certain academic skills?".

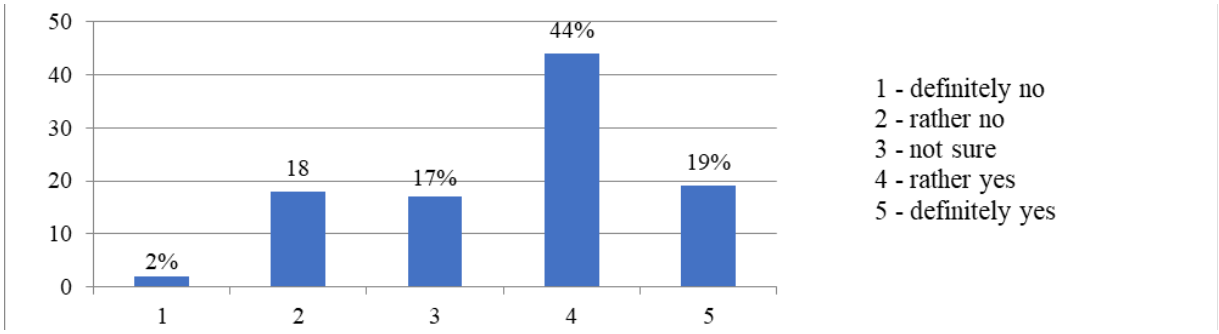

Figure 6: Assessment of the risk of losing certain academic skills due to overreliance on AI in the process of study

The predominant response (44%) was 4, suggesting that most students believe there is a significant risk of losing academic skills due to overreliance on AI. Lower scores (1 and 2) account for a total of 20% of responses, so a fifth of respondents do not see this risk. The average response to this question is 3.62.

The distribution of answers to the question "Do you think the use of AI tools can reduce the amount of teamwork and human communication?" is illustrated in Figure 7.

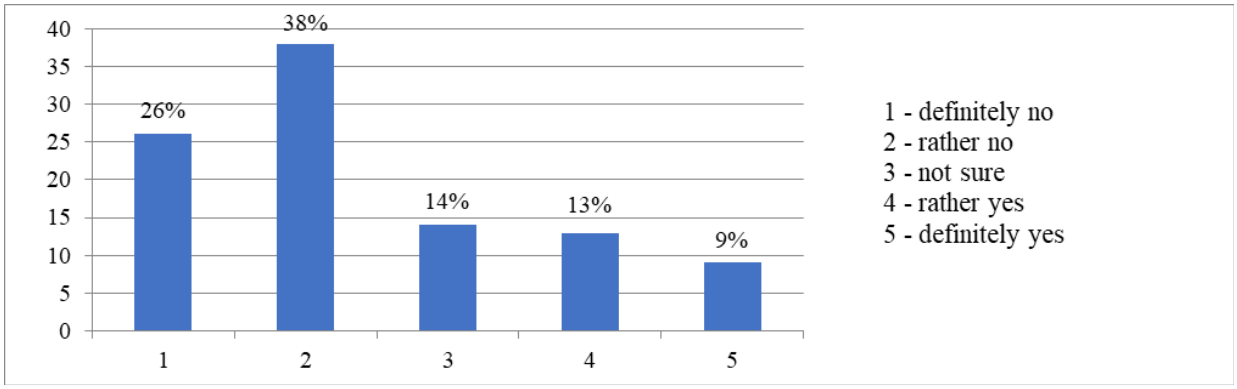

Figure 7: Assessment of the risk of losing teamwork and communication due to the use of AI tools.

The highest proportion of respondents (38%) chose option 2, expressing low concern about the impact of AI on teamwork and opportunities for communication. Higher scores (4 and 5) account for 22% of responses, showing that only a minority of respondents see some risks tied to the overuse of AI when it comes to these skills. The average response to this question is 2.4.

Figure 8 presents the distribution of answers to the question "Do you think the use of AI tools can inhibit the ability to think critically when completing tasks?" The most popular response (46%) was, once again, 4. Thus, the majority of respondents believe that AI can inhibit the ability to think critically. Lower scores (1 and 2) make up 17% of responses, so only a small portion of respondents see no significant problem in this area. The average response to this question is 3.72.

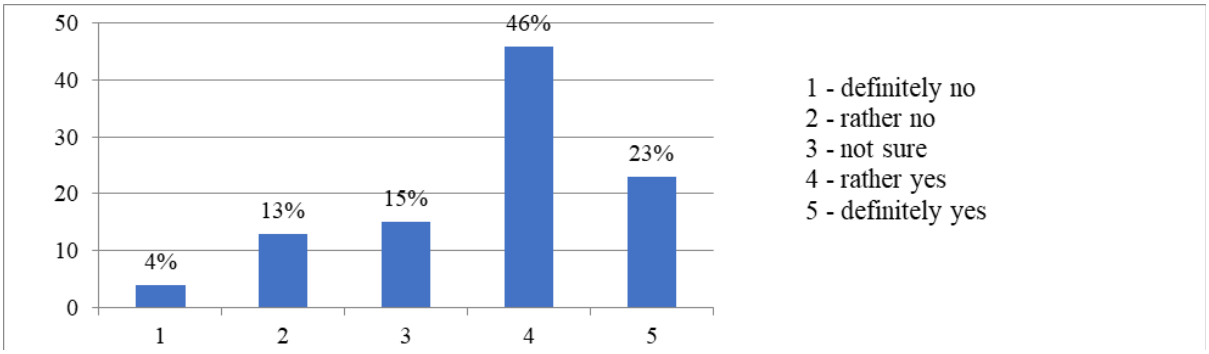

Figure 8: Assessment of the potential inhibition of critical thinking when completing tasks with AI tools.

Figure 9 shows the distribution of answers to the question "Have you noticed that AI tools allow you to spend less time on traditional teaching methods (for example, reading books)?" The most commonly chosen answer (40%) was 4, suggesting that most respondents see a significant reduction in the time spent on traditional teaching methods when using AI. Lower scores (1 and 2) represent only 15% of responses. The average response to this question is 3.75.

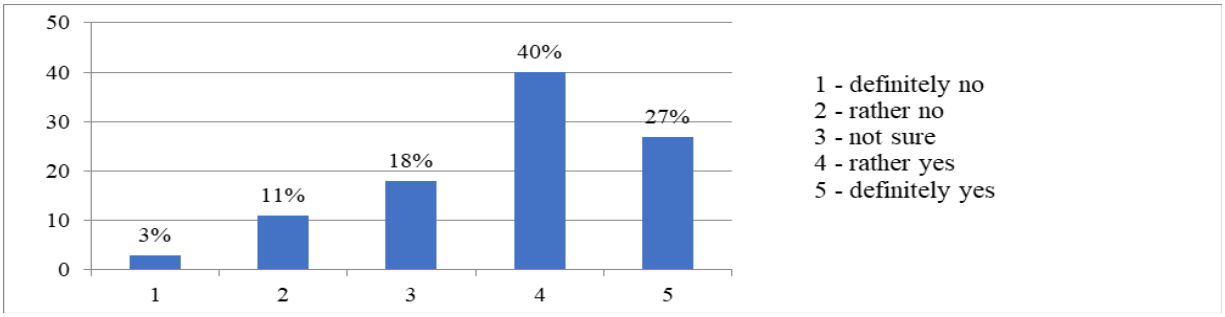

Figure 9: Assessment of the positive impact of AI tools on the time requirements of traditional teaching methods.

In addition, we analyzed students' opinions on whether AI tools help them understand complex topics better. The results are visualized in Figure 10.

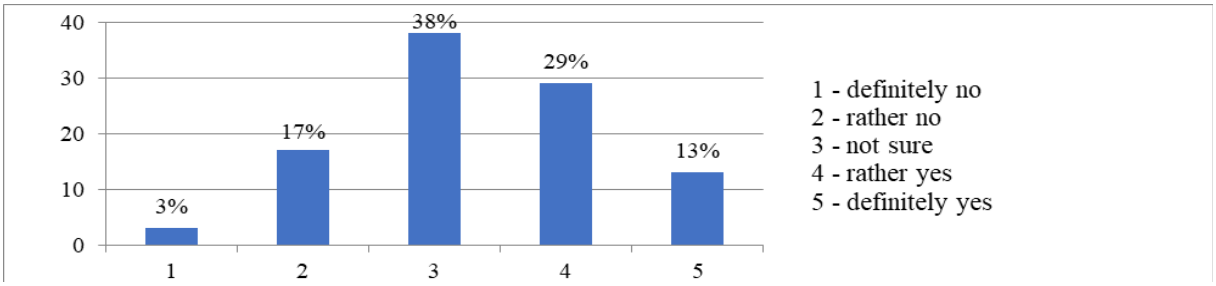

Figure 10: Assessment of the positive impact of AI tools on the understanding of complex topics.

In this question, the majority of students (38%) chose answer option 3, saying they are not sure whether AI tools help understand complex topics better. Lower scores (1 and 2) make up 19% of the responses, meaning that less than a fifth of respondents see little benefit from using AI in this context. Higher scores (4 and 5) were given by 42% of respondents, meaning that a significant proportion of the surveyed students believe that AI had a positive effect on their ability to understand complex topics. The average response to this question is 3.32.

Figure 11: Shows the distribution of answers to the question “Do you think AI tools help save time?”

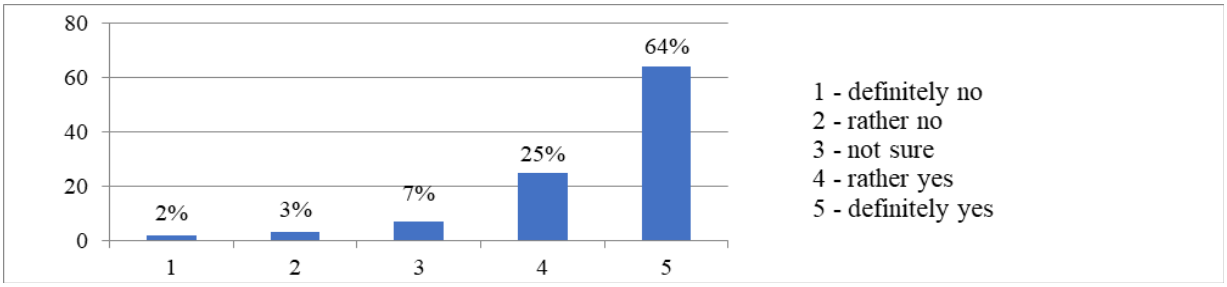

Figure 11: Assessment of the positive impact of AI tools on time costs.

The vast majority of respondents (64%) strongly agree that AI tools do save time. The second most popular answer option is 4, chosen by 25% of the sample. Lower scores (1 and 2) total only 5% of responses, meaning that a very small share of respondents see no benefit in AI in terms of time savings. The average response to this question is 4.47.

Figure 12 presents the distribution of answers to the question “Do you think AI tools can support the development of creative thinking by providing different perspectives and ideas?”

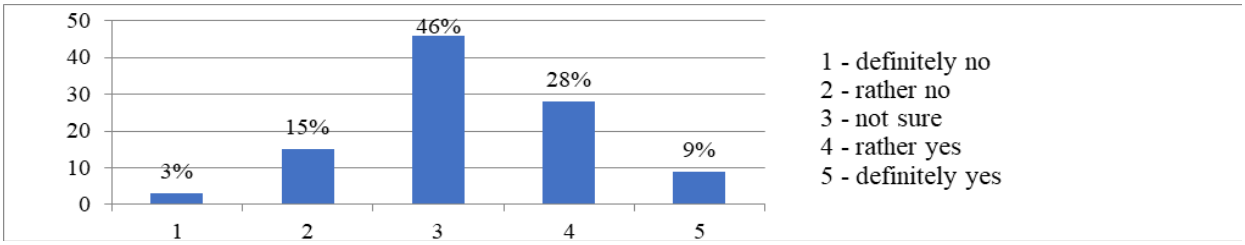

Figure 12: Assessment of the positive impact of AI on the development of creative thinking due to exposure to different perspectives and ideas.

The most popular answer to this question is 3. Almost half of the respondents (46%) are unsure whether AI tools affect the development of creative thinking by offering different viewpoints and ideas. Lower scores (1 and 2) account for a total of 18%, meaning that less than a fifth of the respondents do not see much benefit from AI in this area. In contrast, higher scores (4 and 5) make up 37% of responses, showing that a large share of the respondents can see the positive effect of AI on the development of creative thinking. The average response to this question is 3.25.

The final question asked the respondents’ opinion on whether AI tools can improve the overall level of education. The results are summarized in Figure 13.

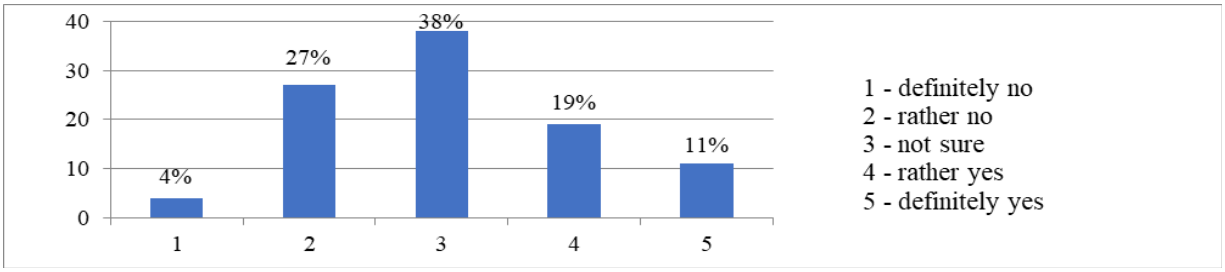

Figure 13: Assessment of the positive impact of AI tools on the overall level of education.

The predominant answer to this question was 3, chosen by 38%. Thus, most students are unsure whether AI tools have a positive or negative impact on the overall level of education. Lower scores (1 and 2) account for 31% of responses, meaning that less than a third of respondents believe that AI has no positive effect on the overall level of education. Higher scores (4 and 5) make up 30% of responses, so another third of the respondents agree that the development of AI can potentially have a positive impact on education.

The results shed light on students' use of AI tools and their opinions on these innovations. More than 92% of respondents reported having used ChatGPT or similar AI tools for educational purposes. This is a significantly higher share compared to the 63% of students reporting similar AI use in a 2023 study in the United States. This prevalence of chatbot users in our sample can be explained by the smaller scale of the study and the fact that it was conducted 2 years later. Over this time, the popularity of AI solutions has increased significantly. Additionally, this active adoption of new technologies by students demonstrates the growing significance of AI tools in education.

The introduction of such a popular solution as the AI-powered chatbot sparked significant resonance among students. Suggestions have been offered on how this software can be utilized further. Our findings are consistent with the results of Ud Duha (2023), with the exception of two aspects. The most popular educational purpose of ChatGPT use cited in our study was completing tasks and solving problems (78%), which significantly exceeds the results of the 2023 study, where only half of the students highlighted this goal. In addition, in 2023, only 34% of students planned to use AI to write their term papers, and merely a fifth planned to write their thesis with AI (Ud Duha, 2023). To compare, in our study, 53% of respondents reported using the chatbot when writing essays, reports, and term papers. In both studies, about half of the respondents noted the possibility of using the proposed AI solutions to translate texts into other languages. These results show that modern students are much more eager to use AI in various aspects of their training. The more prevalent use of AI tools may demonstrate their increasing integration into learning processes or learning trajectories, which translates into more opportunities to use chatbots for academic tasks.

The responses given by AI can be used in different ways. The tactics adopted by the students in our study are not very different from those of students from other universities.

Solutions as convenient as ChatGPT can greatly affect students' engagement in learning. The findings of Sotelo Muñoz et al. (2023) are somewhat different from our results. The responses of 350 students and people related to teaching English suggested that ChatGPT had increased students' enthusiasm and interest in learning. The highest scores on a 5-point Likert scale were given to independence and intrinsic motivation, averaging at 4.03 and 4, respectively. As concluded by Sotelo Muñoz et al. (2023), this indicates that ChatGPT gave students a sense of strength and greater dedication. The findings obtained in our study are markedly different, as up to half of the respondents found that their engagement had slightly decreased after starting to use AI tools. Furthermore, a significant decrease was reported by 16%, and only 4% noted an increase in their readiness and motivation to study. These differences in findings can be attributed to the different educational contexts and students' specific expectations of AI tools.

The majority of students in our study believed that the excessive use of AI solutions can have a detrimental impact on critical thinking skills. The average response to this question was 3.72. According to Firat (2023), at the present stage in AI development, the generated content needs to be controlled, including that produced by text generators. Researches show that high dependence on AI technologies can lead people to lose their critical thinking and decision-making skills, since, according to the results of our survey, students sometimes use the generated responses without editing.

Most of the surveyed students in our study agreed that the use of AI tools for academic purposes reduces the time spent on traditional teaching methods. The average number of points given on this question was 3.75. Rahman & Watanobe (2023) highlight overreliance on technology as a drawback of using AI in education, referring to the negative trend of people becoming less inclined to read books and articles.

Our study also found that most students are undecided on whether AI tools help to better understand complex topics and affect the development of creative thinking. The most popular answer to these questions was 3, or "not sure." In a study by Malmstrom et al. (2023), students from Sweden expressed different views on this issue. They described chatbots as a source of knowledge and inspiration, often referring to them as their tutors, teachers, mentors, or peers. This experience can be explained by the inner workings of AI models themselves, which self-train to find connections between the subjects studied and often use specialized terms that are not always familiar to the student.

Our respondents generally agreed that using ChatGPT and similar tools saves time. The average response to this question was 4.47. Kasneci et al. (2023) report similar findings, showing that AI can save time. The convenience of this solution comes from the simple and transparent form of conversations with a chatbot that answers questions and solves problems in a nick of time

Similar to other studies, our respondents were not concerned about losing teamwork or human communication skills (Gumerova & Shaimieva, 2024). In the study by Malmstrom et al. (2023), almost every student (87%) who used electronic devices during their studies, including for quick access to AI, also used apps for communication. Despite the ease of information search through AI, students still value teamwork and human relationships.

To summarize, respondents in our study had very different opinions about the discussed issues concerning AI tools. This suggests that the influence of AI on education is complex and depends on students' own preferences and learning styles.

CONCLUSIONS

Similar to the adoption of laptops and smartphones, the integration of AI into higher education is just another step in the technological evolution, requiring adaptation and habit. AI tools are becoming an integral part of the academic community, helping students with their daily responsibilities and allowing them to focus on more creative and intellectually challenging tasks. The sustainable use of AI in education requires an informed approach from students and adequate support from educators.

With the right policies and practices, the negative effects of overreliance on AI can be mitigated. Educational institutions should invest in training programs to help students understand the potential risks and benefits of AI and teach them to use these technologies responsibly and consciously. Education on the ethical and responsible use of AI is becoming pivotal.

Among the key points, recommendations for students on the use of AI tools should cover reviewing the information provided by AI tools, using AI as a support rather than a substitute for traditional teaching methods, understanding the ethical problems associated with AI, and the individualization of the learning process.

On the other hand, universities must adapt their curricula and approaches to teaching to prepare students to function well in an AI-dominated world. Relevant measures could include: Introducing courses covering both the theoretical basis of AI and its practical applications; Teaching students to think critically about the data AI relies on. Students need to be able to evaluate the quality of these data, spot potential errors, and interpret the results of the AI's analysis; Promoting interdisciplinary approaches to learning, combining knowledge from different fields, such as computer science, mathematics, management, sociology, and ethics. AI is applicable in many areas, so it is important to have a broad understanding of the challenges brought by its use; Encouraging students to take part in applied projects and internships to get a chance to apply AI to solve real-life tasks. This experience will become invaluable, preparing the candidate for their future career in a hands-on way.

The results indicate the need for further analysis of the impact of AI tools on student learning. Future research should examine different demographic groups and learning styles to better understand how AI affects student engagement and motivation.

REFERENCES

Abdullayev, I., Yakushkina, N., Akhmetshin, E., Zainullin, L., & Kozachek, A. (2024). Improving student motivation for the development of language and speech competencies with training and digital learning platforms. ***Educação & Formação, 9***, e14252. https://doi.org/10.25053/redufor.v9.e14252

Acosta-Servín, S., Veytia-Bucheli, M. G., & Cáceres-Mesa, M. L. (2025). ***Innovar en la práctica docente. Desarrollo de competencias digitales en la Licenciatura***. Sophia Editions.

Andreeva, Yu. & Pronina, E. (2024). Emotional reactions of students and ethical dilemma when working with a neural network. ***RISUS–Journal on Innovation and Sustainability, 15***(4), 155–163. https://doi.org/10.23925/2179-3565.2024v15i4p155-163

Chávez-Cárdenas, M. D. C., Fernández-Marín, M. Á., & Lamí-Rodríguez del Rey, L. E. (2025). ***Web educativa e inteligencia artificial: Transformando el aprendizaje contemporáneo.*** Sophia Editions.

Gazizova, F., Chunikhina, A., Kozachek, A., Mussaui-Ulianishcheva, E., Shichiyakh, R., Gubanova, N., & Kol'cova, N. (2025). Opportunities for the development of higher education under the influence of digital technology: Prospects of Education 4.0. ***Revista on line de Política e Gestão Educacional, 29***(00), e025008. https://doi.org/10.22633/rpge.v29i00.20124

Golubtsova, E., Novikova, E., Chalova, A., & Akhmadeev, R. (2025). The effectiveness of state budget support of innovation development in Russia. ***Universidad y Sociedad, 17***(1), e4922. https://rus.ucf.edu.cu/index.php/rus/article/view/4922/4907

Gumerova, G. I. & Shaimieva, E. Sh. (2024). Teleworking in the data economy for generation Z: Analyzing the opinions of high school students. ***Economic Problems and Legal Practice, 20***(1), 244–251. https://doi.org/10.33693/2541-8025-2024-20-1-244-251

Kasneci, E., Sessler, K., Kuchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Gunnemann, S., Hullermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., … & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. ***Learning and Individual Differences, 103***, 102274. https://doi.org/10.1016/j.lindif.2023.102274

Kirillova, E., Tkachev, V., Kovaleva, O., Telegin, R., & Timkin, A. (2024). Principles of using mediation platforms based on artificial intelligence in resolving family disputes. ***Interacción y Perspectiva, 15***(1), 67–74. https://doi.org/10.5281/zenodo.14031006

Koltyapin, I. A., & Chesnokova, E. V. (2024). Artificial intelligence in forensic automotive expertise. ***Gaps in Russian Legislation, 17***(3), 158–165. https://doi.org/10.33693/2072-3164-2024-17-3-158-165

Kryucheva, Ya., & Tolstoukhova, I. (2023). Modern ways of learning as a means of enhancing the cognitive activity of students. ***Nuances: Estudos sobre Educação, 34***(00), e023006. https://doi.org/10.32930/nuances.v34i00.9963

Kuznetsov, A. V. (2024). Beyond topic modeling: Analyzing historical text with large language models. ***Istoricheskaya informatika, 4***, 47–65. https://doi.org/10.7256/2585-7797.2024.4.72560

Malmstrom, H., Stohr, C., & Ou, A. W. (2023). ***Chatbots and other AI for learning: A survey of use and views among university students in Sweden***. Chalmers Studies in Communication and Learning in Higher Education, 1. https://doi.org/10.17196/cls.csclhe/2023/01

Mamedova, N., Ivleva, M., Vityaev, S., Buzskaya, O., & Rubtsov, A. (2025). Artificial intelligence and neural networks: New context of identification. ***RISUS–Journal on Innovation and Sustainability, 16***(2), 146–154. https://doi.org/10.23925/2179-3565.2025v16i2p146-154

Okishev, B. A. (2024). Features of the legal protection of personal data processed using artificial intelligence technologies. ***Economic Problems and Legal Practice, 20***(2), 70–75. https://doi.org/10.33693/2541-8025-2024-20-2-70-75

Rahman, M. M. & Watanobe, Y. (2023). ChatGPT for education and research: Opportunities, threats, and strategies. ***Applied Sciences, 13***(9), 5783. https://doi.org/10.3390/app13095783

Shaimieva, E. Sh., Gumerova, G. I., & Khakimova, R. N. (2024). Development of a methodology for analyzing the innovative activity of university students in data economics (based on the results of an empirical study). ***Economic Problems and Legal Practice, 20***(2), 309–320. https://doi.org/10.33693/2541-8025-2024-20-2-309-320

Sotelo Muñoz, S. A., Gutiérrez Gayoso, G., Caceres Huambo, A., Cahuana Tapia, R. D., Layme Incaluque, J., Villarreal, F., Cielo Ramírez Cajamarca, J. E., Reyes Acevedo, J. E., Huaranga Rivera, H. V., & Pongo, J. L. E. (2023). **Examining the impacts of ChatGPT on student motivation and engagement**. ***Przestrzeń Społeczna (Social Space), 23***. https://www.researchgate.net/publication/370894242_Examining_the_Impacts_of_ChatGPT_on_Student_Motivation_and_Engagement

Ud Duha, M. S. (2023). ChatGPT in education: An opportunity or a challenge for the future? ***TechTrends, 67***, 402–403. https://doi.org/10.1007/s11528-023-00844-y

Volosova, N. Yu. (2024). Modern approaches to developing the ethics of using artificial intelligence in legal proceedings. ***Lobbying in the Legislative Process, 3***(2), 56–62. https://doi.org/10.33693/2782-7372-2024-3-2-56-62

Zharova, A. K. (2024). Classifiers of destructive impacts in digital space. ***Gaps in Russian Legislation, 17***(6), 28–32. https://doi.org/10.33693/2072-3164-2024-17-6-028-032

CONFLICT OF INTEREST:

The authors declare no conflicts of interest.

Contribution of Authors (CRediT taxonomy):

Autor	Roles
Renat Latypov	Methodology, Supervision, Writing – Original Draft, Investigation, Data Curation
Elena Astapenko	Data Curation, Formal Analysis
Anzhelika Borisova	Writing – Review & Editing
Irina Pinegina	Supervision, Review & Editing
Ekaterina Belova	Formal Analysis Review & Editing
Alisa Tuzlukova	Curación de datos y Análisis formal