Submission date: 20 of September 2025 **Acceptance date:** 30 of December 2025 **Publication date:** 6 of February 2026

IMPACT OF INTERNET COMMUNICATION ON THE DEVELOPMENT OF STUDENTS' RESEARCH SKILLS

IMPACTO DE LA COMUNICACIÓN POR INTERNET EN EL DESARROLLO DE LAS HABILIDADES DE INVESTIGACIÓN DE LOS ESTUDIANTES

Svetlana Dronova [1*]
E-mail: lingofot@gmail.com
ORCID: https://orcid.org/0000-0002-7487-5091
Ekaterina Mussaui-Ulianishcheva[2]
E-mail: catalina37@yandex.ru
ORCID: https://orcid.org/0000-0002-6561-2994
Evgeniya Kurenkova[3]
E-mail: Kurenkovagane@mail.ru
ORCID: https://orcid.org/0009-0009-7611-9343
Ekaterina Andreeva[1]
E-mail: eyandreeva@fa.ru
ORCID: https://orcid.org/0000-0001-9953-4958
Olesya Tereshchenko[4]
E-mail: olesya.tereschenko@yandex.ru
ORCID: https://orcid.org/0000-0003-0772-9518
[1] Financial University under the Government of the Russian Federation, Moscu. Russia
[2] Peoples' Friendship University of Russia (RUDN University), Moscu. Russia.
[3] State University of Education, Moscú. Russia.
[4] Kuban State Agrarian University named after I.T. Trubilin, Krasnodar, Russia.
*Corresponding autor

Suggested citation (APA, seventh ed.)

Dronova, S., Mussaui-Ulianishcheva, E., Kurenkova, E., Andreeva, E., & Tereshchenko, O. (2026). Impact of internet communication on the development of students' research skills. ***Revista Conrado, 22***(108), e5223.

ABSTRACT

With the development of Internet technologies and economic and social transformation, the needs and expectations of the student community are also changing. Technological innovations are being intensively introduced into the higher education system in the form of modern information and communications technologies and their harmonious combination. This became possible mainly due to the advancement of the Internet, which now allows exchanging the required amount of data over any distance, holding discussions with other online users freely, and posting publicly available messages on websites. The development of new Internet communication tools means that the modern student needs to have a wide and comprehensive set of tools that improve communication, learning, and the integration of the academic community. The purpose of the study was to conduct a pedagogical experiment to test the effectiveness of incorporating Internet communication tools in the training of university students. Specifically, the study analyzed the influence of Internet communication tools on the effectiveness of students' learning activities. Based on the conducted pedagogical experiment, it was concluded that the introduction of Internet communication tools in the learning process positively affects the effectiveness of students' educational activities.

Keywords:

Information and Communications Technologies (ICT), Moodle, Social Networks, Teacher Blog, Webinars

RESUMEN

Con el desarrollo de las tecnologías de internet y la transformación económica y social, las necesidades y expectativas de la comunidad estudiantil también están cambiando. Las innovaciones tecnológicas se están introduciendo de forma intensiva en el sistema de educación superior, en forma de modernas tecnologías de la información y la comunicación y su armoniosa integración. Esto fue posible principalmente gracias al avance de internet, que ahora permite intercambiar la cantidad necesaria de datos a cualquier distancia, mantener conversaciones libremente con otros usuarios en línea y publicar mensajes públicos en sitios web. El desarrollo de nuevas herramientas de comunicación en internet implica que el estudiante moderno necesita contar con un conjunto

amplio y completo de herramientas que mejoren la comunicación, el aprendizaje y la integración en la comunidad académica. El propósito del estudio fue realizar un experimento pedagógico para evaluar la eficacia de la incorporación de herramientas de comunicación en internet en la formación de estudiantes universitarios. Específicamente, el estudio analizó la influencia de las herramientas de comunicación en internet en la eficacia de las actividades de aprendizaje de los estudiantes. Con base en el experimento pedagógico realizado, se concluyó que la introducción de herramientas de comunicación en internet en el proceso de aprendizaje incide positivamente en la eficacia de las actividades educativas de los estudiantes.

Palabras clave:

Tecnologías de la Información y la Comunicación (TIC), Moodle, Redes Sociales, Blog Docente, Webinars

INTRODUCTION

In today's world of digital technology, traditional methods of organizing the educational process are losing their relevance and require active integration into the virtual educational environment. This state of affairs in the educational community calls for the creation of an information environment that is capable of supporting the development of research, information, and communication, as well as aesthetic activities of individuals (Agin, 2024).

The vast potential of Internet technologies and online communication means that the modern student needs to have a wide and comprehensive set of tools that improve their functioning in the academic community throughout their educational journey.

The incredible scale at which Internet communications are introduced into the educational process is due to the reasonable desire of its participants to make training more effective and interesting (Belikova, 2024), as well as less time-consuming. This process is aided by the constant development of a variety of virtual platforms and services freely distributed in the academic environment by software developers.

The authors Samoilenko et al. (2022) note that the incorporation of Internet communications into the educational process pushes higher education institutions to a qualitatively new level of development. The use of modern Internet communications, particularly their purposeful application in the educational process of higher education and the expansion of teachers' and students' access to Internet resources, creates fertile ground for increasing the efficiency and quality of education. In particular, students' work is improved by modern information technologies; effective methods are utilized to support group and individual forms of training; the experimental research base of the educational process is deepened (Polozhentseva et al., 2024); and the discrepancy between the existing educational content and the accomplished development of modern science shrinks.

Researchers of contemporary university education identify two main approaches to integrating Internet communications into the educational process. The first approach is to equalize the status of real and virtual educational structures and, in some cases, completely replace the traditional educational process, rigidly tied to a specific place and time, with distance learning implemented using the latest technologies (Agaev et al., 2023). The first target is prominent in scientific papers devoted to the technical aspects of developing educational Internet technologies, although their social functions are virtually ignored (Poroshenko et al., 2024). As argued by Akhmetshin et al. (2025), researchers who see university virtualization as the only possible trend in its development pay the most attention to the prospects and advantages of computer learning technologies while largely overlooking the negative consequences of their implementation (Kalinin, 2024).

The second approach preserves the university as an educational institution with strictly defined territorial boundaries. The possibilities of virtualizing the educational process are viewed as auxiliary rather than decisive in university development.

The contributions of Chávez-Cárdenas et al. (2025) make it possible to understand that Internet-mediated communication functions not only as a channel for information transmission but also as an expanded cognitive environment that redefines learning and research practices in higher education. The authors emphasize that educational web environments, enhanced by artificial intelligence tools, promote processes of information searching, selection, analysis, and validation, which are competencies directly linked to the development of students' research skills. In this sense, constant interaction through digital platforms, academic networks, virtual learning environments, and intelligent resources strengthens research autonomy, critical thinking, and the ability to formulate well-grounded research questions. These aspects are reflected in the improved effectiveness of academic activities observed in the pedagogical experiment discussed in this study.

From a complementary perspective, the volume edited by León-González & Pire-Rojas (2025) provides an integrative framework in which digital communication and emerging technologies, including artificial intelligence, are conceived as mediators of deep learning and university-level research training. The authors argue that the systematic use of online communication tools, such as virtual

classrooms, webinars, academic blogs, and collaborative networks, stimulates neurocognitive processes related to attention, metacognition, and scientific knowledge construction. This perspective supports the findings of the present study by showing that Internet-based communication not only increases academic interaction but also enhances students' ability to organize information, compare sources, and actively participate in research communities, thereby strengthening their research competencies.

Taken together, both sources reinforce the central argument of this article by demonstrating that the strategic incorporation of digital communication tools in higher education contributes significantly to the development of research skills, while simultaneously improving learning effectiveness and students' integration into the academic community. These contributions consolidate the study's approach by positioning Internet communication as a key element in the transformation of contemporary educational processes and in the training of critical and competent researchers in digital environments.

The problems of using Internet communications in the pedagogical process are covered in numerous studies. Findings show that the introduction of these technologies into teaching practice becomes a way to improve the effectiveness of the pedagogical process (Gazizova et al., 2025; Kabzhanova et al., 2024), while the traditional ways of obtaining higher education have gained new features, combining the lecture and seminar learning system with the capabilities of distance learning.

Apart from the traditional Internet communication tools, such as e-learning platforms, universities are increasingly utilizing such tools as instant messengers, video conferencing, social media (Andreeva & Pronina, 2024; Jandette-Castillo & Ruiz, 2024), and student social networks in the educational process.

Interaction on social media has become an important element of communication in higher education. The most popular approach involves building communication with stakeholders in higher education on the university's official pages on popular social media platforms. Smaller social groups are also created around specific departments and courses at a given university, as well as around student organizations (e.g., research clubs) (Zhuzeyev et al., 2024). The student body uses popular social media sites for educational and other purposes with a focus on sharing content. Oftentimes, student communities use discussion forums and blogs as Internet communication tools to exchange views and information. These types of two-way communication tools often provide valuable content and reliable and independent information, as they are managed (moderated) autonomously by students themselves.

An important element of support for the educational process is websites with moderated content, including multimedia and text files. This is a rich group of resources that consists of websites, not exclusively educational, which provide a variety of multimedia files, such as animations, presentations, documentaries, and scientific films. The systematic use of online resources by students teaches them to seek reliable materials and introduces them to websites that provide such resources.

However, it is important to ensure the functions of individual Internet communication tools complement each other and create a holistic hybrid system of interaction between the student and the university.

The vast majority of students have access to a wide range of Internet communication tools and digital instruments at home (outside the university). The chief goal of education is to adapt these tools to make them conducive to the achievement of educational goals. According to researchers, this requires teachers to continuously hone their skills in using these new tools to the same extent as students, as well as to develop blended learning classes (Boldysheva, 2024).

Our paper reports on the organization, process, and findings of a pedagogical experiment aimed at verifying the effectiveness of introducing Internet communication tools in the training of university students.

The hypothesis tested in this study was that the introduction of Internet communication tools in the learning process contributes to the effectiveness of students' learning activities.

MATERIALS AND METHODS

The purpose of the experiment was to test the effectiveness of the introduction of Internet communication tools in the learning process of university students.

The set research goal was achieved through a set of consecutive objectives:

1. forming experimental (EG) and control (CG) groups for the pedagogical experiment;

2. developing criteria and indicators to assess the effectiveness of students' learning activity;

3. conducting a diagnostic assessment at the ascertaining stage of the experiment to confirm the uniformity of the groups;

4. organizing students' training with the use of Internet communication and evaluating their application as a means of improving students' learning effectiveness at the formative stage of the experiment.

These objectives were accomplished using a set of psychological and pedagogical research methods:

- theoretical methods — an analysis of scientific and methodological literature to determine the current state of the problem of introducing Internet communication tools into the learning process of university students;
- empirical diagnostic methods (survey, conversations) to determine the effectiveness of university students' learning activity;
- a pedagogical experiment to empirically test the effectiveness of the introduction of Internet communication tools into the university educational process;
- mathematical statistics methods for the qualitative and quantitative processing of the empirical results.

The pedagogical experiment on the introduction of Internet communication tools into the training process was conducted in two stages: the ascertaining and the formative.

The CG and EG were formed as follows:

- the CG included 2nd- and 3rd-year students (97 students in total) who studied using the university's Moodle platform;
- the EG consisted of 2nd- and 3rd-year students (98 students in total) who were trained using both the university Moodle platform and other Internet communication tools, including social networks, the teacher's blog, webinars, and web conferences.

In connection with the research hypothesis, Table 1 shows the complex of criteria and indicators used to assess the effectiveness of students' learning activity.

Table 1: Criteria and indicators of student learning effectiveness.

Criteria	Indicators (students' assessment)
Motivational	Interest in learning
	Diligence and consistency
	Awareness of the connection of the studied subjects with the future profession
	Activity and concentration in classes
Operational	Understanding what to do during lectures, seminars, and independent work and how to do it
	Ability to adequately assess one's learning activities, knowledge, and skills
	Developed skills and abilities, ease of completing learning actions and operations
	Creative and reproductive types of actions during training
Informational	Professional and practical orientation of educational information
	Systematized and easily understandable educational information
	The volume of educational information retained in students' long-term memory
	Technical characteristics of information exchange — the clarity of the teacher's speech, the visualization of information (on a screen or board), and background noise levels
Regulatory	Students' functional state — fatigue, tension, mood, satisfaction with the performed activity
	The presence and nature of external control by the teacher, the department, or the dean's office
	Effectiveness of teacher–student feedback
	Development of self-control and self-regulation
	Activating, neutral, or inhibiting influence of business and emotional relations formed between a student and their fellow students and teachers

The effectiveness of learning was evaluated by students on a scale of "–5" to "+5" points, the latter corresponding to the high level. The score for each individual criterion was calculated as the arithmetic mean of the scores of its indicators.

Thus, the levels of learning effectiveness were determined based on each criterion: low: $-5 < Ef < -2$; average: $-2 < Ef < +2$; and high: $+2 < Ef < +5$.

The processing of the experimental results and the assessment of the effectiveness of introducing Internet communication tools in the process of teaching university students were carried out using mathematical statistics methods. The objective of the experiment was to detect differences in the distribution of certain indicators (students' assessment of learning effectiveness criteria) by comparing two empirical distributions. For this purpose, we used Pearson's $\chi 2$ test.

The assessment scale consists of 3 categories (the "low," "average," and "high" effectiveness of learning), meaning that there are 2 degrees of freedom. From the table of $\chi 2$ values for the significance level of $\alpha = 0.05$ and 2 degrees of freedom, the critical value of $\chi 2$ is $\chi 2crit = 5.991$.

RESULTS AND DISCUSSION

The hypothesis on the lack of differences in learning effectiveness between the CG and EG before the formative stage of the pedagogical experiment was tested by analyzing the results of the survey Table 2.

Table 2: Distribution of learning effectiveness scores in the CG and EG before the formative experiment.

Criteria	Learning effectiveness levels					
	Low		Average		High	
	CG	EG	CG	EG	CG	EG
	$\chi 2$					
Motivational	35.1	38.8	34.0	26.5	30.9	34.7
	1.336					
Operational	36.1	36.7	31.95	28.6	31.95	34.7
			0.302			
Informational	29.9	35.7	33.0	31.6	37.1	32.7
	0.82					
Regulatory	34.0	30.6	34.0	36.7	32.0	32.7
	0.288					

Since the pre-experiment value of $\chi 2 < \chi 2crit$, at the start of the experiment, the CG and EG had no significant differences in the effectiveness of learning.

Data on the effectiveness of educational activities as a result of the formative stage of the pedagogical experiment for CG and EG students are presented in Table 3.

Table 3: Distribution of learning effectiveness scores in the CG and EG after the formative experiment.

Criteria	Learning effectiveness levels					
	Low		Average		High	
	CG	EG	CG	EG	CG	EG
	$\chi 2$					
Motivational	29.9	11.2	36.1	35.7	34.0	53.1
	12.698					
Operational	26.8	13.3	40.2	34.7	33.0	52.0
	9.196					
Informational	27.8	12.2	38.1	36.7	34.0	51.1
			9.548			
Regulatory	23.7	10.2	39.2	36.7	37.1	53.1
	8.296					

The values of $\chi 2$ for the EG and CG after the formative stage of the experiment are higher than $\chi 2crit$ (12.698 > 5.991, 9.196 > 5.991, 9.548 > 5.991, 8.296 > 5.991). This demonstrates that the examined samples have statistically significant differences.

Given that EG students were trained using both the university's Moodle platform and Internet communication tools, such as the teacher's blog, webinars, and web conferences, we can argue that the latter instruments were the determining factor behind the higher results. Thus, the proposed hypothesis received experimental confirmation.

The results of the statistical analysis demonstrate that the use of such additional Internet communication tools as the teacher's blog, webinars, and web conferences contributes to the effectiveness of learning.

In this context, we should note that when designing a training course, the modern teacher can determine the scale and significance of Internet communications in this particular course. This depends on factors such as:

- The teacher's proficiency in Internet communication tools. This parameter ranges from unwillingness and inability to use these instruments to advanced skills in their application (Mamedova et al., 2025);
- The features of the course taught. The opportunities to use Internet communication tools are wider in humanities courses than in technical or purely practical applied disciplines, which aim to develop specific practical skills, although there are several options even for this scenario;
- Students' skills in using Internet communication tools.

Specific features of the teacher's work when introducing Internet communications into the educational process are the ability to teach more students than traditional methods allow; use a wide range of electronic didactic tools in training; purposefully, selectively, and effectively influence each student; establish individual dialogue with each student; and promptly replenish, edit, and perfect the bank of electronic didactic materials and teaching methods. In addition, the teacher has the opportunity to get acquainted with new pedagogical ideas and methods, exchange experience, and improve their teaching skills by communicating with colleagues and scientific and methodological centers and cooperating with interested parties and educational institutions.

The results of our study demonstrate several characteristic features of introducing Internet communications in the educational process. First, it provides an opportunity to establish and create feedback, which contributes to successful teacher-student communication. Second, the flexibility of learning allows students to be freer in their choices, since they can study at a convenient time instead of attending in-person classes. Third, the individualization of training allows creating individualized curricula. Finally, information support provides students with access to a collection of necessary educational electronic materials from the university server and some third-party Internet resources.

In the process of teaching, Internet communication tools can serve as a source of information, a means of control, a platform for communication, and a way of organizing the learning process. However, teachers often experience internal psychological resistance to applying Internet communication tools, since it requires restructuring the already developed, tested, and familiar forms of organizing the study of material. This reluctance creates an inconsistency with modern requirements, which is deeply felt by students. This means that the quality of the educational process depends on how appropriate and well-grounded the use of Internet communications is.

Internet communication tools provide ample opportunities to optimize and improve the efficiency of the educational process, thereby affecting the quality of education as an outcome of this activity. Different types of work may have different indicators, but this does not diminish the teacher's involvement in the learning process.

For example, a popular practice is using the teacher's blog in the educational process. In pedagogical practice, blogs are used as: 1) a platform for consultation and pedagogical discussions; 2) a platform for organizing distance learning courses (to publish lecture materials, ask questions, and post topics for discussion); 3) an information board to notify students of changes in the educational process; and 4) an environment for organizing students' online research activities.

Research also shows that the kit of effective Internet communication tools includes webinars — virtual online seminars in which the host (in our case, the teacher) can transmit information (experience, knowledge). Webinars completely recreate the atmosphere of a traditional university lecture. Students can see and listen to the teacher, send them questions, and get their answers. Of course, webinars cannot replace personal communication, but they provide an opportunity to move to a fundamentally new level of communication.

The use of Internet communication tools as a means of knowledge control, for example, when students take their tests online, allows the teacher to save classroom time allotted to studying the discipline. Another form of online knowledge control is submitting written creative works via email or posts on a dedicated forum for the course, where they can also be discussed directly by the group. This form of work stimulates students, teaches them responsibility for the material they write, encourages discussion, helps participants in the discussion form their own opinions, and saves classroom time.

The application of Internet communication tools to quickly exchange educational information involves creating an information storage system, which can be done using websites or their sections, file exchangers, virtual disks, email, social networks, etc. The most important thing is to make the information accessible and understandable to the teacher and students without any difficult actions like entering six-digit codes, watching commercials, registering on different websites, etc. The information that can be exchanged this way can be textbooks and articles on the discipline under study, lecture texts and presentations,

assignments, teaching materials, educational videos, samples of student works, etc.

With a competent and balanced approach, the Internet also offers abundant opportunities for communication, discussing different issues, and providing consultations to students.

The described types of work become effective in education only when used as auxiliary tools. They mustn't become a substitute for communication between the teacher and the student.

Information technologies provide broad access to knowledge but also require new standards for quality assessment, different from the standards of traditional training programs.

One of the universal analysis algorithms, which covers both the pedagogical and organizational aspects of using Internet communication tools in the learning process, has been described. The main components of this algorithm are information resources (didactic materials); technologies supporting information exchange; partners for cooperation and discussion; and experts who can evaluate the results of educational activities.

Resource constraints have a significant impact on this process. The administration of each university determines their own priorities for the implementation of Internet communication tools. The choice of a specific alternative depends not only on financial capabilities (Golubtsova et al., 2025) but also on the results of teacher and student surveys assessing the quality of different Internet communication tools, as well as their motivation and information culture (Kryucheva & Tolstoukhova, 2024).

However, even full compliance with all methodological requirements for implementing Internet communications in teaching university students does not guarantee pedagogical success. Oftentimes, such educational networks result in the creation of new original texts that contradict traditional textbooks and in no way contribute to the sustainability of scientific knowledge. The great accessibility of Internet resources gives rise to the problem of selecting information effectively.

Internet communications are a convenient tool for including students in the didactic process by creating opportunities to transmit knowledge to places far away from the university's physical location, as well as to teach people with disabilities. Moreover, these technologies enable students to take special branch courses beyond the standard educational program.

To summarize, Internet communications introduced into the educational process can be used to solve several tasks: organizing students' collective work in the classroom and outside of it, which promotes cooperation and provides teamwork experience; upgrade the organization of students' home study, since Internet communications allow access to educational content without time, geographic, or age limits; developing personalized learning environments, which benefit students' personal portfolios and improve the academic content of disciplines; promoting self-study (implementation of the principles of research-based learning); supporting students' individual learning, as each student needs to work at their own pace; and organizing informal communication between the teacher and the student.

CONCLUSIONS

The wide application of Internet communication tools in the learning process has been proven to contribute to the effectiveness of educational activities, meaning that our research hypothesis was confirmed.

The development of Internet communication tools and the resulting transformation of the communication model from passive (one-sided) to active (two-sided) provides students and the entire academic community with ample opportunities to improve the effectiveness of the educational process. First, the information can be personalized for individual students, considering their needs, tastes, and preferences. Second, the wide and convenient access to information helps students expand their horizons and save and optimize their time. Third, Internet communication tools enable communication with students and specialists from all around the world. Fourth, students' use of Internet communication tools for group work allows them to create practical team projects, including interdisciplinary and international. Fifth, by creating valuable content while still at university (in the form of industry publications, scientific essays, analyses, graphic projects, and applications) and publishing it in their personal blogs, websites, and thematic portals, students can create a positive image of themselves even before the start of their professional careers.

The introduction of Internet communications in higher education presents teachers with the task of developing new methods of managing students' learning activities and new didactic principles of education (individualization, activity, consciousness, and other principles from a new angle). The didactic capabilities of the teacher in the process of incorporating Internet communications into higher education are expanding significantly and serve as an effective addition to traditional forms of education.

Without a doubt, the further development of Internet communication tools is going to encourage the introduction of additional solutions, instruments, and functions to

improve communication and development in academic communities.

REFERENCES

Agaev, F. T., Mammadova, G. A., & Melikova, R. T. (2023). "Obrazovanie 4.0" v epokhu tsifrovoi transformatsii: Puti povysheniia ee effektivnosti. ***Open Education, 27***(4), 4–16. https://doi.org/10.21686/1818-4243-2023-4-4-16

Agin, A. M. (2024). Tekhnologii virtual'noy real'nosti v sovremennom interaktivnom iskusstve. ***Culture and Art, 12***, 30–46. https://doi.org/10.7256/2454-0625.2024.12.72502

Akhmetshin, E., Abdullayev, I., Yumashev, A., Klochko, E., & Gayazova, S. (2025). Potential applications of artificial intelligence: Building knowledge bases and improving the efficiency of educational process organization. ***Revista Conrado, 21***(105), e4655. https://conrado.ucf.edu.cu/index.php/conrado/article/download/4655/4098/9658

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

Belikova, E. K. (2024). Osnovnyye voprosy filosofii iskusstvennogo intellekta. ***Filosofiya i kul'tura, 1***, 1–11. https://doi.org/10.7256/2454-0757.2024.1.69543

Boldysheva, N. O. (2024). Uchitel' budushchego i budushcheye uchitelya v menyayushcheysya professii. ***Sotsiodinamika, 1***, 17–27. https://doi.org/10.25136/2409-7144.2024.1.68962

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., Chunikhin, A., Kozachek, A., Mussaui-Ulianishcheva, E., Shichiyakh, R., Gubanova, N., & Kol'cova, N. (2025). Oportunidades para o desenvolvimento do ensino superior sob a influência da tecnologia digital: perspectivas da educação 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

Jandette-Castillo, N. M. & Ruiz-Maturano, E. S. (2024). El aprendizaje automático con el uso de las Tecnologías de la Información y las Comunicaciones. ***Sophia Research Review***, ***1***(1), 15-19. https://doi.org/10.64092/hxw9g912

Kabzhanova, G., Aubakirova, R., Belenko, O., & Tursungozhinova, G. (2024). Designing effective pedagogical strategies for fostering meta-competence using smart resources in language training. ***European Journal of Contemporary Education, 13***(1), 54–66. https://doi.org/10.13187/ejced.2024.1.54

Kalinin, S. V. (2024). Problemy integratsii otechestvennoy i zarubezhnykh sistem obrazovaniya v sovremennom pedagogicheskom protsesse. ***Pedagogika i prosveshcheniye, 1***, 25–33. https://doi.org/10.7256/2454-0676.2024.1.39662

Kryucheva, Ya. & Tolstoukhova, I. (2024). The importance of motivation in students for successful professional education. ***Revista on line de Política e Gestão Educacional, 28***(00), e023031. https://doi.org/10.22633/rpge.v28i00.19886

León-González, J. L., & Pire-Rojas, A. (Comp). (2025). ***Investigación, neurociencia e inteligencia artificial: Hacia una formación universitaria integral***. Sophia Editions.

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

Polozhentseva, I., Vaslavskaya, I., Vasyukov, V., & Nesova, N. (2024). Possibilities of application of adaptive knowledge testing using artificial neural networks in training economics students. ***European Journal of Contemporary Education, 13***(3), 589–597. https://doi.org/10.13187/ejced.2024.3.589

Poroshenko, O., Tereshchenko, N., & Shatunova, T. (2024). Natural human attitude to integration of artificial intelligence. ***Revista Universidad y Sociedad, 16***(4), 410–417. https://rus.ucf.edu.cu/index.php/rus/article/view/4565/4447

Samoilenko, N. B., Zharko, L. N., & Shevchenko, M. S. (2022). Tsifrovizatsiia vysshego obrazovaniia: ot teorii k praktike. ***Smart Digital Economy, 2***(4), 88–99. https://cyberleninka.ru/article/n/tsifrovizatsiya-vysshego-obrazovaniya-ot-teorii-k-praktike

Zhuzeyev, S., Zhailauova, M., Makasheva, A., Kydyrbaeva, K., Omarova, G., & Suleimenova, B. (2024). Influence of digitalization on the vocational training of primary school teachers based on Kazakh national features and ethnopedagogical traditions. ***Revista on line de Política e Gestão Educacional***, ***27***(00), e023038. https://doi.org/10.22633/rpge.v28i00.19905