RESEARCH ARTICLE

The Potential of The Electronic Information-Educational Environment of A University In Professional Education: Trends And Prospects
El potencial del entorno informativo-educativo electrónico de una universidad en la educación profesional: tendencias y perspectivas

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Summary

At present, the educational paradigm of professional education shows a tendency to change towards the creation of electronic information-educational environments of universities. This trend is determined by the global conditions of the COVID-19 pandemic, as well as national state interests. The problem of the study lies in substantiating the potential of the electronic information-educational environment of a university in professional education in the context of global changes. The goal of the study is to reveal the potential of university electronic information-educational environments in professional education and identify the trends and perspectives of creating electronic information-educational environments of higher education institutions. Results: A characteristic of the electronic information-educational environment of a university is provided, and its components and resources are identified. The predominant tendencies in the development of e-learning in modern professional education are revealed. The advantages of electronic information-educational environments of universities in professional education are allocated. The prospects for the development of electronic information environments of universities are substantiated.

Keywords: Professional Education, Digital Education, Digital Literacy, Online Learning Technologies, Information And Communication Platforms.

Resumen

En la actualidad, el paradigma educativo de la formación profesional muestra una tendencia al cambio hacia la creación de entornos electrónicos informativos-educativos de las universidades. Esta tendencia está determinada por las condiciones globales de la pandemia de COVID-19, así como por los intereses de los estados nacionales. El problema del estudio radica en fundamentar el potencial del entorno informativo-educativo electrónico de una universidad en la formación profesional en el contexto de cambios globales. El objetivo del estudio es revelar el potencial de los entornos informativos-educativos electrónicos universitarios en la educación profesional e identificar las tendencias y perspectivas de creación de entornos informativos-educativos electrónicos de las instituciones de educación superior. Resultados: Se proporciona una característica del ambiente informativo-educativo electrónico de una universidad, y se identifican sus componentes y recursos. Se revelan las tendencias predominantes en el desarrollo del e-learning en la educación profesional moderna. Se asignan las ventajas de los entornos informativos-educativos electrónicos de las universidades en la formación profesional. Se corroboran las perspectivas de desarrollo de entornos de información electrónica de las universidades.

Palabras clave: educación profesional, educación digital, alfabetización digital, tecnologías de aprendizaje en línea, plataformas de información y comunicación.

Introduction
Relevance

In recent years, there has been a substantial dynamic of educational programs realization using electronic information-educational environments (EIEE) of universities. The modern paradigm of education is characterized by network interaction and educational institutions designing dynamic and flexible EIEE and developing personalized educational

trajectories based on them. The trend of the development of EIEE is officially enshrined at the legislative level. The program "Digital Economy of the Russian Federation" (approved by Order № 1632-r of the Government of the Russian Federation of July 28, 2017) provides for the creation of an accessible digital environment in all educational institutions by 2024 and increasing the digital literacy and competence of the population in the digital economy (Decree of the Government of the Russian Federation № 1632-r, 2017). According to the official data of the Monitoring of Education Markets and Organizations (HSE), at the end of 2020, the depth of penetration of online technologies into Russian higher education did not exceed 4%. Under the state program "Development of Education", it is planned to provide 100% of educational institutions with the Internet by 2024 creating a network of digital education centers with federal support (Issledovanie rynka rossiyskogo online obrazovania, 2020).

The process of digitalization of education has initiated the development of innovative formats of learning based on online learning technologies, virtual environments, information communication platforms, and social media which significantly expanded the capabilities of educational institutions (Minchenko, Poddubnaia, Zadneprovskaia, 2020, p. 278). The introduction of digital technology into the educational process of educational institutions was dramatically facilitated in 2020 by the COVID-19 pandemic which had faced the entire socio-economic sphere with the task of urgently searching for the optimal forms of interaction in the current social reality. In the pandemic conditions, the electronic information-educational resources were favored as a forward-looking landmark for the development of the global community within the information space (Minchenko, Poddubnaia, Zadneprovskaia, 2020, p. 279). According to the information and analytical results of statistical and sociological surveys, the share of Russian universities that had switched to distance learning using electronic educational resources reached 80% by the end of 2020 (Leven, Suslov, 2020).

The need to maintain social distance, certain norms for the functioning of social institutions, restrictions on large crowds of people, and other realities of modern life result from the current situation with COVID-19 which in a very special way initiates the search for optimal mechanisms for implementing electronic educational resources in the educational process and focusing public attention on the resource potential of distance learning.

The study goal is to reveal the potential of the EIEE of a university in professional training.

The study objectives: to theoretically substantiate the category of "EIEE" in modern pedagogical research; to identify its components and resources; to reveal the predominant trends in the development of e-learning in modern professional education; to outline the advantages of EIEE of universities in professional education; to substantiate the prospects for the development of electronic information environments of universities.

Background

Before the 2020 pandemic, Russia was far behind other countries in terms of using electronic information and educational resources for educational purposes. In 2019, the percentage of the use of online resources by the Russian population was only 3% compared to Finland, Iceland, the UK, and Sweden as the first four leaders in the adoption of online educational technologies (Leven, Suslov, 2020, p. 4). This is also supported by the fact that 70% of students from other countries give preference to distance learning which is not characteristic for Russia (Leven, Suslov, 2020).

The tendency of greater popularity of remote learning resulting from the force majeure changes due to the situation with coronavirus infection has prompted scientific research on the effective realization of electronic educational technologies. The issues of using the potential of EIEE in the work of modern universities have become a subject of active discussion in pedagogical research.

The problems of using the EIEE of a pedagogical university in organizing distance learning of students during the pandemic are covered in the works of N.N. Antonova. The author describes the experience of centralized transition of the Moscow City University to distance learning accomplished through modifying to online platforms, Microsoft Teams and Moodle, with special attention paid to the psychological and pedagogical aspects of e-learning (Antonova, 2020).

The practice of using an EIEE in a classical university is explored by A.V. Leonteva and I.V. Detkova in the context of deploying active learning methods in the educational process. The authors provide survey results confirming the positive potential of using distance educational technologies (Leonteva, Detkova, 2021). A.N. Tsatsulin presents his developments in activating students' creative potential in mastering higher education programs in an EIEE in terms of the didactic approach. The example of students completing a production case study in the "Economic analysis" academic discipline shows "tangible benefits at a new level of IT achievements accounting for the specifics of online communication" (Tsatsulin, 2020, p. 99).

The importance of using electronic educational resources in the work of universities of physical culture, sports, and tourism is stressed by E.V. Polzikova, F.R. Khatit, E.L. Zadneprovskaia et al. who describe the experience of network interaction in a university, as well as the specific features of how students create portfolios using cloud services (Polzikova et al., 2017; Zadneprovskaia, Poddubnaia, 2020).

E.A. Panina analyses the category of "digitalization of education" and clarifies its content and the principles of its functioning in the educational space of a technical university. The researcher indicates popular online services including Moodle, Edmodo, iSpring, and WebTutor the use of which "at all levels of education, especially in professional training, opens up new horizons in continuous learning, professional development, and retraining providing for more accessible and less costly training" (Panina, 2020, p. 65).

T.N. Poddubnaia and co-authors present a comprehensive analysis of the EIEE as a form, means, and a distance technology and reveal the ways of carrying out various forms of learning activities using e-learning technologies in the training of future tourism industry specialists, as well as the advantages of said ways (Zadneprovskaya, Dzhum, Khatit, 2020).

Overall, researchers highlight the great role of the EIEE of a university in the practice of distance learning indicating it among the most promising content of the modern educational paradigm. However, the issues of using electronic educational resources effectively when realizing the main educational programs require further theoretical substantiation. This circumstance testifies to the relevance of the present study.

Methods

The study methodology is based on the systemic and structural, aspect, and pragmatic approaches. We use a set of research methods including online education market analysis, the study of information resources and statistical data, analysis of the experience in the implementation of EIEE of Russian universities in professional training, as well as generalization, induction, description, and prediction.

Results and discussion

The concept of an "electronic information and educational environment" is linked to other related categories such as "digital learning environment", "distance learning technologies", and "online learning".

E.A. Panina defines "digital educational environment" as a resource integrating "the progressive achievements of electronic educational technologies ensuring that students master educational programs in full regardless of their location in accordance with the requirements of the legislation of the Russian Federation in the field of distance education" (Zadneprovskaya, Dzhum, Khatit, 2020, p. 60).

E.V. Sergeeva and M.Iu. Chandra understand the digital educational environment as "the infrastructure of an educational organization changed in terms of the availability of digital equipment and services, ...as well as the subject positions of participants in educational relations" (Sergeeva, Chandra, 2020, p. 10).

T.A. Dzhum et al. define university EIEE as "...a set of tools and resources based on information and communication technologies focusing on meeting the requirements for the implementation of educational activities" (Zadneprovskaya, Dzhum, Khatit, 2020, p. 250). Within the wide range of the functional capabilities of EIEE, a special role is played by the organization of online learning. Online learning is based on the use of online resources – the Internet. It involves mixed forms of learning (for instance, the integration of lecture videos into online and seminar classes), as well as online courses (Poddubnaia, 2020).

A detailed description of the experience of using an EIEE of a university is provided by N.A. Ilyinova et al. (2021). The researchers comprehensively present one of the resources of higher educational institution EIEE – the popular online learning platform Moodle (from the English "modular object-oriented dynamic learning environment"). University EIEE provide students and teachers with automated access to said electronic resource from the website of a given educational organization through individual login and password. The functions of Moodle allow uploading information materials on the discipline, video lectures, tests, and presentations, as well as using interactive resources of any format (YouTube channels, Wikipedia, cloud servers). The authors provide screenshots of the homepage, a personal account, a news forum, etc.

Thus, the foundation of a university EIEE is formed by the digital analog of traditional learning (using multimedia, online platforms, web resources, and cloud services in the educational process) which generally expands the range of educational practices in the new conditions of the digital economy and society (Kabanova, Vetrova, 2019).

Let us provide the information about the foreign practice of introducing information educational technologies in higher professional education. According to a study of the Russian online education market, in 2020, the distribution of the elements of university EIEE was dominated by EdTech products the functionality of which consisted in the implementation of managerial decisions of the educational institution, specifically:
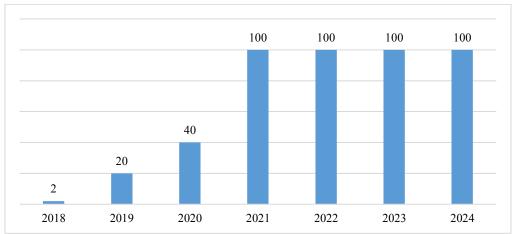
- 44% – organization management resources,

- 33% – the educational process management and monitoring resources,

- 20% – resources for educational trajectory design (Issledovanie rynka rossiyskogo online obrazovania, 2020).

In the context of the implementation of the Digital Economy of the Russian Federation program and the state program "Development of Education", the regions are developing their projects aimed at creating a digital educational space. The Ministry of Education, Science and Youth Policy of the Krasnodar region is implementing a regional project "Digital learning environment". The project framework involves developing a unified information space of education of the Krasnodar region focused on creating "digital competence" profiles for students, teachers, and administrative and managerial staff in all educational organizations of

the region. The project also provides for the design and implementation of individual curricula (including the right to credit the results of online certification courses) and the automation of administrative and management processes.

The indicated program echoes the "Strategy for long-term socio-economic development of the Krasnodar region" (Kuban-2030) that concerns providing equal access to educational resources for students, creating conditions for training competent personnel with the skills of e-learning in a digital learning environment (Figure 1) (Ministry of Education, Science and Youth Policy of the Krasnodar region, n.d.).

Figure (1): Information about students' access to EIEE (the Krasnodar region, 2021)
Based on the analysis of the aforementioned studies as well as personal experience of working remotely, we can identify the following predominant trends in the development of e-learning in modern professional education (Table 1).

Table (1): Predominant trends in the development of e-learning in modern professional education (Issledovanie rynka rossiyskogo online obrazovania, 2020; Minchenko, Poddubnaia, Zadneprovskaia, 2020; Gambeeva, Sorokina, 2018; Semenov et al., 2020)

№	Trends in the development of e-learning in professional education	Characteristic features
1	"Micro-learning" orientation	Portioned presentation of educational information with microtasks for each microblock/section.
2	Active use of video lecture elements	An interactive form of learning involving the credible presentation of material in the form of videos from official sources.
3	Gaming techniques or gamification	Designing lessons with game elements (using stories, point system, levels, badges, leaderboards, virtual currency, goods, characters, success digits, etc.).
4	Cross-platform nature	An advantage allowing the website to be accessible from any device (desktop computer, laptop, tablet, phone, etc.) regardless of the operating system. This allows participating in the learning process from home via the Internet and online servers.
5	"Cloud technologies": SkyDrive, Google Drive, Yandex.Disk, etc.	Allow storing large amounts of educational information, provide convenient online access to educational information resources. Used extensively when posting online courses for academic disciplines/modules.
6	Massive open online courses (MOOC)	Provide the opportunity for distance learning through electronic courses taken online through open access to

		the Internet. The courses may be free or shareware, traditional or intensive. Differentiated by basic disciplines studied at universities, or by topic. Expand the educational capabilities of organizations and students, allow for more flexible educational process planning.
7	Augmented and virtual reality (VR)	An alternative to traditional learning – an environment simulated using computer technology which a user can enter using special sensor devices. VR is capable of maximal simulation of the effects of VR on a person. Make it possible to simulate training (for example, an operation, operating technical devices, etc.). Classified as full immersion VR and non-immersive VR.
8	Behavioral analytics	The use of modern behavioral theory for the analysis of human behavior and its change. Behavioral analysis reveals behavioral patterns that can be used for the future development of specific strategies.
9	Transformation of online course websites into educational services	Expanding the capabilities of online course websites to use them as educational services.
10	Redistribution of the powers of universities in the implementation of their educational programs through outsourcing to private EdTech-companies.	Pilot projects involving partnerships between higher education institutions and the main developers of online learning platforms are being developed.

Thus, the EIEE of a university comprises interrelated elements: information and educational resources, computer facilities, information, telecommunication technologies, and software and organizational and methodological support intended for use by information and educational service consumers. Exploration of the EIEE of higher education institutions (Minchenko, Poddubnaia, Zadneprovskaia, 2020; Leven, Suslov, 2020; Antonova, 2020; Zadneprovskaya, Dzhum, Khatit, 2020; Gambeeva, Sorokina, 2018; Semenov et al., 2020) allows us to allocate its main resources (Table 2).

Table (2): Resources of the EIEE of higher education institutions

№	Component	Resource
1	Electronic information-educational resources (EIEE)	- the official website of the higher education organization; - university corporate communication and information network (servers, data transmission systems, licensed software, etc.) providing for communication within the organization between the educational process subjects. For example, the electronic document management system (EDMS) "Electronic University", the automated educational process control system AMS "VUZ", "Electronic dean's office", etc.; - electronic information resource of a scientific library/libraries (for example, the automated library information system (ALIS) "Foliant", ALIS module "MegaPro", ELS "University library online"); - online learning platforms selected by each university individually (for example, Moodle, Microsoft Teams, Zoom, Prometei, WebTutor, etc.);

		- automated WEB-system for online testing of students (for example, Indigo, "EMM-TEST", UniTest); - electronic databases to be used in the educational process based on the concluded contracts.
2	Automated means of access to electronic information resources	- a universal window to access the official website of the university; - personal accounts of scientific and pedagogical workers, students (including portfolio), applicants; – online course base; - a unified system of authorized individual access to the university EIEE resources; - portals/teams of dean's offices, departments, curators, etc.; - student portals (e.g. faculty, student groups, interest groups); - portals of KVN teams, graduate students, etc.
3	Computer facilities	- servers; - desktop computers, laptops; - duplicating equipment; - multimedia, etc.
4	Telecommunication environment components ensuring the operability of the EIEE	- local computer network; - Wi-Fi; - Internet access point.

The modern scientific and pedagogical community is actively discussing the effectiveness/ineffectiveness of the education subjects' work in electronic information-educational systems of higher education institutions. The study of the experience of work of numerous Russian universities (Minchenko, Poddubnaia, Zadneprovskaia, 2020; Leven, Suslov, 2020; Antonova, 2020; Panina, 2020; Zadneprovskaya, Dzhum, Khatit, 2020; Gambeeva, Sorokina, 2018; Semenov et al., 2020) allows us to identify the advantages of university EIEE in professional education.

For students:

1. Interactivity involving the presence of numerous communication channels (between the structural divisions of an organization, between teachers, between teachers and students, between students, between applicants, etc.).

2. Opportunities to develop useful connections (each participant can take advantage of the chance to broaden their understanding of the academic discipline and make new acquaintances).

3. Feedback and grades (the ability to quickly assess the completed assignment, tests, projects, exams, etc.).

4. Logically structured presentation of material (the material is presented in a concise form that is easy to understand).

5. A relatively free study schedule giving a student the right to choose their mode of completing homework, listening to video lectures.

6. The opportunity to use it in integration with the traditional learning system (mixed model).

7. The development of students' discipline and responsibility, the skills of independent information search and processing.

For educational organizations and scientific and pedagogical workers:

1. Fast automated processing of electronic documents (statements, interim certification, orders, etc.) eliminating the need to repeatedly duplicate the same information in different forms (electronic, paper-based).

2. The possibility of time-efficient exchange of information between the structural divisions of a university.

3. The opportunity to control the conduct of classes and student attendance.

4. Storing portfolios, practice reports, and other achievements of students in electronic format and cloud servers which saves paper and space.

5. The ability to use library resources, class schedules, timetables, and curricula remotely.

6. The best way to spread information about the characteristics of a university, news, Doors Open Days, etc.

Therefore, the EIEE has the function of an expanded educational resource that stimulates the personal and social development of all subjects of education in the digital economy.

Conclusion

The conducted study allows us to formulate the following conclusions:

1. The EIEE of a university is represented by an integrated unity of several elements – information and educational resources, computer facilities, information and telecommunication technologies, software, and organizational and methodological support intended to be used by professional education service consumers.

2. Modern professional education involves the mandatory use of the EIEE of a higher educational institution in educational activities.

3. Modern e-learning models include: "micro-learning", video lectures, gaming techniques/gamification, cross-platform nature, cloud technologies, MOOC, augmented and VR, behavioral analytics, the transformation of online course websites into educational services, and redistribution of the powers of universities in the implementation of their educational programs through outsourcing to private EdTech-companies.

4. The advantages of deploying university EIEE in professional education include quick automated processing of electronic documents, time-efficient exchange of information between structural divisions, advanced monitoring and control functions, preserving students' achievements in electronic formats and cloud servers, remote access to library resources, class schedules, and other information, etc.

The virtual learning environment is currently the main innovative trend in professional education. The state has a dominant function in the development of digital technologies for higher education as evidenced by the legislative consolidation of the development of electronic educational environments of educational organizations at the federal and regional levels.

According to estimates by Global Market Insights, the average annual growth rate for the global online education market will reach about 7-10% by 2023 (Issledovanie rynka rossiyskogo online obrazovania, 2020) which provides support for the further promising implementation of innovative multimedia technologies (the use of presentations, video lectures, 3D worlds, cloud services, etc.), corporate communication and information network, and online learning platforms in the practice of professional education of higher educational institutions. The orientation towards changing the educational environment of universities in terms of higher activity of electronic information environments appears possible and corresponding to the national interests.

References

Antonova, N.N. (2020). Nekotorye aspekty organizatsii distantsionnogo obucheniia studentov v period pandemii [Some aspects of organizing distance learning for students during the pandemic]. The world of science, culture and education, 5: 8-9.

Decree of the Government of the Russian Federation № 1632-r. (July 28, 2017). Program "Digital Economy of the Russian Federation". Retrieved from: http://static.government.ru/media/files/9gFM4FHj4PsB79I5v7yLVuPgu4bvR7M0.pdf

Gambeeva, Iu.N., Sorokina, E.I. (2018). Razvitie elektronnogo obucheniia kak novoi modeli obrazovatelnoi sredy [Development of e-learning as a new model of the educational environment]. Creative economy, 12(3): 285-304.

Ilyinova, N.A., Voevodina, S.S., Zadneprovskaya, E.L., Khatit, F.R., Panina, E.A. (2021). Distance learning experience in the context of globalation of education. Propositos y Representaciones, 9(1).

Issledovanie rynka rossiyskogo online obrazovania [Study of the Russian market of online education]. (2020). Retrieved from: https://innoagency.ru/files/Issledovanie_rynka_rossiyskogo_online_obrazovania_2020.pdf

Kabanova, E.E., Vetrova, E.A. (2019). The Use of Modern Electronic Gadgets in the Educational Process of the University. European Journal of Contemporary Education, 8(3): 524-533.

Leonteva, A.V., Detkova, I.V. (2021). Aktivnye metody obucheniia v professionalnoi podgotovke spetsialistov pomogaiushchikh professii [Active teaching methods in the professional training of specialists in helping professions]. Business. Education. Law, 1: 468-472.

Leven, E.I., Suslov, A.B. (2020). Distantsionnoe obuchenie naseleniia [Distance learning of the population]. Monitoring of Education Markets and Organizations. Information and analytical materials based on the results of statistical and sociological research, 22. Retrieved from: https://www.hse.ru/data/2020/10/09/1371262882/Выпуск%2022020%20Дистанционное%20обучение%20населения.pdf

Minchenko, V.G., Poddubnaia, T.N., Zadneprovskaia, E.L. (2020). Tsifrovye tekhnologii v obrazovanii: sovremennye vyzovy i perspektivy [Digital technologies in education: modern challenges and prospects]. Tsifrovaia ekonomika i skvoznye tsifrovye tekhnologii: sovremennye vyzovy i perspektivy ekonomicheskogo, sotsialnogo i kulturnogo razvitiia. Samara: NITS "PNK" LLC.

Ministry of Education, Science and Youth Policy of the Krasnodar region. (n.d.). Official website. Retrieved from: https://minobr.krasnodar.ru/natsproekt-obrazovanie-/tsifrovaya-obrazovatelnaya-sreda/

Panina, E.A. (2020). Aktualnye voprosy tsifrovizatsii obrazovaniia v sovremennykh usloviiakh [Topical issues of digitalization of education in the modern conditions]. Bulletin of the Maikop State Technological University, 3: 60-67.

Poddubnaia, T.N. (2020). Nekotorye aspekty tsifrovizatsii sovremennogo obrazovaniia [Some aspects of digitalization of modern education]. Nepreryvnoe obrazovanie v

Rossii: sostoianie i perspektivy: materials of reports from the 10th All-Russian scientific and practical conference of the Rostov State Medical University of the Ministry of Health of Russia. Rostov-on-Don: Publishing house of the RSMU.

Polzikova, E.V., Katit, F.R., Poddubnayia, E.L., Zadneprovskaia, E.L. (2017). Teoreticheskie i metodicheskie aspekty podgotovki studentov v oblasti turizma [Theoretical and methodological aspects of training students in the field of tourism]. Bulletin of the Maikop State Technological University, 3: 61-66.

Semenov, K.B., Kuznetsova, V.E., Ivanova, M.E., Starkova, E.N. (2020). O problemakh poiska putei tsifrovizatsii obrazovatelnoi sredy vuza [On the problems of searching for the ways to digitalize the educational environment of a university]. The Surgut State Pedagogical University Bulletin, 4: 133-141.

Sergeeva, E.V., Chandra, M.Iu. (2020). Tendentsii tsifrovoi transformatsii obshchego obrazovaniia: monitoring mnenii pedagogov i rukovoditelei obrazovatelnykh organizatsii [Trends in the digital transformation of general education: monitoring of the opinions of teachers and heads of educational organizations]. Izvestia of the Volgograd State Pedagogical University, 8(151): 9-15.

Tsatsulin, A.N. (2020). O nekotorykh didakticheskikh priemakh vypolneniia samostoiatelnykh zadanii v usloviiakh vynuzhdennogo distantsionnogo obucheniia [On some didactic techniques for performing independent tasks under the forced distance learning conditions]. Administrative Consulting, 12: 83-101.

Zadneprovskaia, E.L., Poddubnaia, T.N. (2020). Portfolio kak odin iz instrumentov otsenivaniia urovnia podgotovki budushchikh spetsialistov sfery turizma [Portfolio as a means of assessing the level of training of future specialists in the field of tourism]. Nepreryvnoe obrazovanie v Rossii: sostoianie i perspektivy: materials of reports from the 10th All-Russian scientific and practical conference of the Rostov State Medical University of the Ministry of Health of Russia. Rostov-on-Don: Publishing house of the RSMU.

Zadneprovskaya, E.L., Dzhum, T.A., Khatit, F.R. (2020). Using the electronic information and educational envroment of the university in the training of tourism industry workers. Amazonia Investiga, 9: 249–259.