

Digital Platforms in a Distance Learning Environment: An Educational Trend or the Need of the Hour?

Kdyrova Inesh^{1,*}, Sherman Mykhailo², Ievsieieva Olga³, Pertsov Mykyta⁴, Puhovskiy Evgen⁵ & Yuryk Olha⁶

¹Department of Music, Faculty of Music, Kyiv National University of Culture and Arts, Kyiv, Ukraine

²Department of Computer Science and Software Engineering, Faculty of Computer Science, Physics and Mathematics, Kherson State University, Kherson, Ukraine

³Department of Accounting and Auditing, Faculty of Economics, Ukrainian State University of Railway Transport/UkrSURT/, Kharkiv, Ukraine

⁴Department of Music, Faculty of Music, Kyiv National University of Culture and Arts, Kyiv, Ukraine

⁵Department of Mechanical Engineering Technology, Mechanical Engineering Institute, Igor Sikorsky National Technical University of Ukraine (Igor Sikorsky Kyiv Polytechnic Institute), Kyiv, Ukraine

⁶State Institution, Institute of Traumatology and Orthopedies, National Academy of Medical Sciences of Ukraine, Kyiv, Ukraine

*Correspondence: Faculty of Music, Department of Music, Kyiv National University of Culture and Arts, Kyiv, Ukraine. E-mail: oliver.williams2050@gmail.com

Received: July 4, 2022

Accepted: September 6, 2022

Online Published: November 11, 2022

doi:10.5430/jct.v11n8p273

URL: <https://doi.org/10.5430/jct.v11n8p273>

Abstract

The COVID-19 pandemic has demonstrated the promise of distance education using digital technologies. For Ukraine, this method of education has gained additional importance, since after the beginning of the unprecedented for the 21st century. Russian military aggression, the appeal to distance education technologies has become relevant. The purpose of the article is to analyze digital distance learning platforms, determine their effectiveness and prospects for further use. The work uses general scientific research methods (analysis, synthesis, induction, deduction). At the same time, the research is based on the principles of generalization, specification and abstraction. With the help of the comparison method, it was possible to compare the use of digital distance learning platforms in Ukraine, the USA and Saudi Arabia, where specific empirical data are presented. The research also used the axiomatic method, which provides for the ascent from theoretical statements (axioms) to specific conclusions. The conclusions concluded that distance learning is cheaper and more productive because it leaves more time for students to improve themselves and implement their own projects, and for teachers to conduct scientific work. The example of Saudi Arabia shows that a large number of students can be reached through the use of digital technologies and distance learning. This experience is useful for Ukraine. It is recommended to develop digital technologies of distance education in Ukraine, because its use will make it possible to save budget funds, guaranteeing the maximum involvement of teachers and students in the educational space.

Keywords: digital technologies, distance education, Ukraine, Russian aggression

1. Introduction

Requirements for modern educational systems are dictated by the development of the information society. The COVID-19 pandemic demonstrated the promise of distance learning forms using media resources. Thanks to this, discussions about the problems and benefits of such a distance process began in the professional environment, as the impact of the disease on public and educational life was palpable. At the same time, when the disease receded, these discussions only intensified, because the methods developed for distance learning proved to be quite positive. For Ukraine, the use of digital educational platforms has taken on added significance. After the beginning of Russia's military aggression against Ukraine, unprecedented for the XXI century, the use of distance learning technologies gained additional relevance. It is a question of security considerations and the advantages that the use of modern

distance techniques has over traditional forms of education. At the same time, the best effectiveness of distance education has not been fully confirmed. Therefore, the purpose of the article is to investigate digital distance learning platforms, to determine their effectiveness and prospects. Additional actualization requires the hypothesis that the use of digital technologies and distance learning, in general, will not cease to exist after overcoming the effects of the pandemic in the world.

The Russian-Ukrainian war of 2022 can be characterized by the expression of U.S. Secretary of State Anthony Blinken, who believed: “This is more than a conflict between two countries. It is more than a confrontation between Russia and NATO. It is a crisis with global consequences that requires global attention and action” (Mbah & Wasum, 2022, p.145). The global understanding and intensity of this conflict can also be seen in the words of U.S. President J. Biden during his speech in March 2022. In particular, he stressed that Russian aggression affects the whole world (Mbah & Wasum, 2022). Researchers have already repeatedly focused on the impact of the immediate war and the smoldering conflict (actually ongoing since 2014) on both nations. Initially, it was noted on Russia, given the imposition of intense global financial sanctions against it, which caused tangible damage to its economic situation. Note that the troops of the campaign also hit the position of Ukraine, so, accordingly, this further actualize the social issues of development. Education is an important element of the social structure that suffers as a result of the war. Thus, possible ways to minimize losses in the educational sector are a subject of special attention and deserve additional study.

Currently, distance education using the latest technologies is used at all levels of the educational and learning environment, which affects the emergence of professional research on this topic. Consequently, the problem of the development of distance education has been investigated by quite a few scholars. In particular, Zampieri & Castellani (2022) characterized the main changes that were caused by the COVID-19 pandemic, experts paid considerable attention to the characteristics of key transformations in the educational sphere. Andersone (2020) characterized key educational innovations through the prism of globalization and informatization of modern society. Demiray (2017) characterized the importance of online platforms for distance learning. The researcher notes that the result of the debate about the importance of digital technology in the modern day is considered a kind of “tsunami” that changed the phase of education, especially in the field of distance education. Demiray (2017), examined the impact of distance platforms on the development of modern education. Kem (2022), analyzed common personalized and adaptive digital learning platforms implemented in global e-learning systems. Ungerer (2019) identified the importance of distance E-learning for today's youth. Ayoub et al. (2020) characterized the distance learning capabilities of the Coursera platform. Note that this resource is used by students around the world. Chan et al. (2021) characterized the advantages and disadvantages of using online learning in higher education. In a general monograph, these authors investigated the impact of pandemic coronavirus (COVID-19) on higher education learning. They focused especially on the analysis of new information and communication technologies. At the same time, in their work, the authors investigated the problem of the effectiveness of distance learning in the context of the pandemic. At the same time, Lopes & Soares (2022) analyzed the features of online learning through the prism of multimedia E-learning. The researchers note that the development of online learning and multimedia in E-learning influences the spread of various innovations in modern education. This monographic study focuses on a case study of online education, the practical use of E-learning, and the latest innovations in modern science. Pinheiro & Santos (2022) highlighted the problem of the promising application of online learning. In addition, these scholars attempted to predict the spread of distance learning in the future. The study of Rajab (2018) is important for our work. This specialist characterized the effectiveness of using distance learning in territories suffering from war. The specialist paid notable attention to Saudi Arabia, where local conflicts are currently taking place. Rajab (2018) noted the effectiveness of the use of online learning in areas of military conflict. Cherng & Davis (2019) investigated the main educational technologies, analyzed the definition of multiculturalism in modern education. Abuhassna et al. (2020) characterized a new model of using distance learning platforms to improve student achievement. At the same time, Kumar Basak et al. (2018) characterized the problem of theoretical differences between D-learning, E-learning, and M-learning. Ungerer (2019) investigated modern teaching methods in the online education system. At the same time, other important issues remain unresolved. For example, the effectiveness of digital education systems in comparison with traditional education is a relevant problem for researchers of modern education. The problem of using learning digital platforms in wartime is also understudied. The experience of implementing online education in Ukraine (in the context of a full-scale Russian offensive) requires a more detailed analysis, which is the task of this article.

2. Method

General scientific methods of research (analysis, synthesis, induction, deduction) are used in the work. At the same

time, the study is built on the use of special pedagogical research methods. From the theoretical pedagogical methods, the principles of generalization, concretization, and abstraction were applied. Using the method of comparison, it was possible to compare the use of digital distance learning platforms in Ukraine, the USA, and Saudi Arabia, because the officials of these countries provided empirical data confirming the effectiveness of modern digital platforms. As a result, the article was able to compare the practice of using multicultural principles in schools in Ukraine and the world. The study also used the axiomatic method, which involves ascending from theoretical statements (axioms) to specific conclusions. At the same time, the issue of further implementation of digital platforms in distance learning in Ukraine is covered based on the predictive method. Also, the work is built on the application of the statistical method, which consists of a qualitative analysis of data, in particular, the official documents of the Ministry of Education and Science of Ukraine, the U.S. Department of Education, etc. This allowed relying on reliable empirical materials of official nature in forming conclusions.

SW-analysis is used in the work. On the basis of its use, it was possible to characterize the weak and strong sides of the use of distance learning platforms. Note that initially (at the end of the 20th century) this method was used exclusively in marketing and economic research, however, it is now actively used in pedagogy. As a result of the formation of a special scale, the research managed to identify the negative and positive aspects of the introduction of remote platforms.

3. Results

It is now almost impossible to imagine modern society without the information network. The COVID-19 pandemic caused a crisis that accelerated the development of technological innovations. Many types of activities have begun to operate in an online format, so there has been a marked increase in the demand for mechanisms to regulate digital communication (Demiray, 2017). At the same time, there has been a marked expansion and improvement of digital educational platforms, which have become available to people regardless of their geographic location (Abbasi & Foudi, 2020).

Since the pandemic, quarantine restrictions have increased the role of remote digital education. Users have increasingly opted for distance learning through various online platforms, courses, or webinars (Pinheiro & Santos, 2022). The new shift in digital technology is driving educational institutions to adopt all new educational practices (Tsekhmister et al., 2021). For example, to support education in then uncertain times, the world's most powerful online education platform called "Coursera" was the first to give universities free access to more than 3,500 courses (Ayoub et al., 2020). Many Ukrainian universities were able to take advantage of this through the digital base of Coursera for Campus and attract teachers and students to online webinars from the world's leading universities. On this platform, it is possible to receive a certificate in case of successful completion of the selected courses (Chan et al., 2021). More than 65 million people are known to have registered on the Coursera platform during 2020. This is 430% more than last year. Students were most likely to choose courses that contributed to their self-development. Note that because of the negative impact of COVID-19 on booth life, young students have become actively interested in methods of psychological health management and interested in the science of human mental health. For this reason, the most popular courses in 2020 were "The Science of Being Happy" from Yale University (over 2.5 million visitors) and from Johns Hopkins Private Research University "COVID-19: Spreading the Connection" (1.5 million). Note that the pandemic has increased the demand for online education. As a result of the development of the labor market and because of the need to requalify workers, priorities in the formation of the necessary skills are transformed. In 2020, the Coursera platform reaches 65 million users from 60 countries (Ayoub et al., 2020). In addition to psychology courses, students choose other educational courses that help improve information (media education), technological and business organization, and promotion skills (Ayoub et al., 2020). Note that the field of business determines the formation of skills for effective business, the field of technology contributes to the formation of skills in the development, and maintenance of various kinds of computer systems and software.

After the full-scale Russian invasion of Ukraine on February 24, 2022, there was a new need to expand the network of digital platforms for online learning. At the initiative of the Office of the President of Ukraine, together with the international organization UNICEF, several digital resources for distance learning for both children and students from institutions of higher education were created (Digital platforms, 2022). In particular, an open online platform called United Ukrainian University (UUU) was formed. This structure provides a special "helpline" to all educational institutions to help them apply the offer in a disciplined way and establish the registration and possible adaptation of training courses.

At the same time, the Ministry of Education and Science of Ukraine initiated other distance projects for the

development of education. In particular, “Learning Without Borders” was created together with leading Ukrainian TV channels and various online TV platforms. Also, for pupils of Ukrainian schools was created All-Ukrainian school online, which actively distributes video lessons, tests, etc. On this platform, there is a “Cabinet for the teacher”, which contains lesson outlines (Digital platforms, 2022). For convenience, there is a mobile application of the same name for the operating systems Android and iOS Apple. Leading Ukrainian psychologists and teachers, with the support of the government, launched the “Support a Child” project for parents, teachers, and even students alike.

During wartime and wartime conditions, some modern Ukrainian schools provide free access to education. For example, the online school “DAR” has created a free learning system for students in grades 7-11. This allows children to study effectively even when they are outside of Ukraine. The Academy of Education “A+” began to implement a distance learning project for all schoolchildren in Ukraine, who can join classes through the online conference platform “Zoom” (Korniichuk et al., 2021). At the same time, “Jamm School” has created a distance school for high school students. The learning platform, called Think Global Online, offers free classes and educational materials for everyone. There is a special schedule on the Think Global Online website, where you can track which day certain classes will be held. The schedule is constantly updated. It should be noted that there are both lessons on standard and “nonstandard” school subjects. The online school Liko Education Online offers free access to education on the Liko Education platform (Digital platforms, 2022). It is designed for students in grades 2-11. The “OkStudy” distance learning platform offers free daily online seminars with students from 6 years old. Here you can not only study but also engage in various games, dance, watch movies and improve your English. The distance school “At the Lesson” has developed and created special classes in different subjects to provide educational support to Ukrainian students.

There are also many opportunities for successful distance learning for Ukrainian students. In cooperation with Harvard University, and Massachusetts Institute of Technology back in 2012 a special online learning center “EdX” was created. Now this institution provides online education services on the free OpenEdX system. It teaches courses in various areas, such as modern technology, literature, history, linguistics, etc (Tsekhmister et al., 2021). Note that in a somewhat simplified mode, these courses translate lectures that are taught at Harvard and other famous educational institutions (Abbasi & Foudi, 2020). Inclusion in these courses is free, but there is a fee to obtain a certificate. Special courses have been developed for technical students on the Udacity platform. However, mathematics, design, physics, and biology are also outlined here. Each course is designed for 2 months, and each week you need to spend up to 6 hours on training. The Canvas Network platform offers free courses. However, some courses here are paid.

At the same time, the Ukrainian system of online learning “Prometheus” provides free opportunities for universities and well-known teachers to distribute and publish their own courses and lectures to familiarize a wider public. Note that such courses consist of video lectures where students have the opportunity to interact with the ejector. In addition, Prometheus seminars are constantly available online (Ransaw & Majors, 2017). Prometheus has a mobile app for iOS and Android. There is also a dedicated resource for student learning called Iversity. It conducts interactive seminars and lectures for various institutions of higher education. In addition, the website “Iversity” offers free access to educational materials on various specialties. A platform called “Stanford Open Edx” provides the opportunity to participate for free in various video seminars conducted by Stanford University professors (Korniichuk et al., 2021). The Ukrainian Maidan Open University project is a remote platform that aims to study and disseminate knowledge about civic education among students (Digital platforms, 2022). Note that this platform includes more than 30 free topics for Ukrainian students. The lectures are delivered by renowned scholars and professors. After successful completion of all classes, participants receive a certificate certifying their studies on this platform. So, despite the conditions of war, Ukrainian students have ample opportunities to study.

4. Discussion

The benefits of distance learning and e-learning platforms are obvious to lead educational institutions and organizations around the world. In particular, the U.S. Department of Education prepared a report based on specific empirical research on this issue. In it, employees of the institution noted that the use of distance e-learning has had many achievements in comparison with classical forms, and these advantages can be documented. First of all, the use of e-learning methods allowed students to access course content, syllabi, and other documents at any time and from any location (Chan et al., 2021). The use of distance learning classes and related electronic support has helped to provide students with multiple options for conducting the educational process (Ungerer, 2019). This became useful for those who could not attend traditional classes or were looking for ways to diversify the learning process.

Secondly, according to experts, e-learning has resulted in the dissemination of instructional materials with less economic and, importantly, time cost to the student audience (Cleveland-Innes & Garrison, 2020). Also among the positive effects of distance learning is the ability of instructors to reach as many students as possible while maintaining high standards for teaching instructional material.

With the aim of studying the effectiveness of the implementation of remote platforms, we will conduct a SW-analysis, with the help of which we will note the advantages and disadvantages of e-learning in Table 1.

Table 1. SW-Analysis of the Strengths and Weaknesses of Distance Learning

Strengths	Weaknesses
Expanding the scope of personnel training	Lack of personal face-to-face meetings
Availability of education in case of crisis situations (pandemic, war)	Difficulty in developing distance courses
The use of the latest information technology of conveying information	The high cost of building a distance learning system
Be flexible in forming an individual educational trajectory	Digital platforms aren't always suitable for learning practical professions
Reduction of costs in obtaining education	

So there are more strengths than weaknesses. However, this means that the distance education system will continue to need reform and improvement. A key disadvantage of distance education is that online platforms are not always suitable for learning practical professions. However, this system is effective for teaching humanitarian disciplines (for example, for history). It should be noted that the teaching of history in the conditions of war is important: because even the study of events that have a thousand-year history can demonstrate the spread of fakes that have devastating consequences for modern times (Merenuik, 2021). In addition, researchers note that the benefits of implementing distance learning in developing countries are much more powerful (Pinheiro & Santos, 2022).

It can be concluded that students and teachers will only benefit from such a technique, while it will save a lot of money and improve social and economic, as well as economies and societies in such areas will be greatly improved by the introduction of e-learning (Hanifa et al., 2019). A report by American officials also summarized that the use of laptops during the educational process generally improves teamwork and communication skills among students, independent learning habits, the development of critical thinking, and the ability to solve problems independently (Cleveland-Innes & Garrison, 2020). In addition, students get more time to devote to independent study, homework, writing personal projects or even research publications, community service, etc (Lash et al., 2020). All of this certainly improves the overall learning experience. The use of e-learning has also demonstrated positive trends in teacher productivity (Kem, 2022). They have been able to use a fairly broad palette of tools to motivate students, identify gaps in preparation, and thereby improve the educational process. In the same way, the process of self-improvement of teachers takes place, who have to master new methods of work, and modern computer technologies, to improve the quality of teaching to conduct the educational process (Suri & Chandra, 2021). Thus, e-learning in general significantly improves the overall level of education among students and teachers working remotely, which also indirectly allows you to increase the ability to keep your job in the future (by saving money on classroom training).

Also note the published experience of Saudi Arabia, where the study of e-learning was also taken very responsibly. In this Muslim country, officials stressed the importance of using distance education to expand the learning capacity of the local population, especially for women and other groups in need (Rajab, 2018). It is primarily about the fact that Saudi Arabia uses a form of education that is traditional in Islam, which does not allow men and women to be in the classroom or communicate at the same time while the class is taking place. This posed some problems for the educational process because universities offered parallel instruction in all subjects for both genders. The introduction of e-learning has made the process much cheaper and quicker, and quality control is much better ensured because teachers can teach online or through an in-country system that is accessible to both genders. In addition, people in remote areas of Saudi Arabia have limited access to university education (Rajab, 2018). Accordingly, by conducting online teaching, it is possible to reach a large audience of students more quickly and easily at a minimal cost.

Note that the proposed experiences are very important for contemporary Ukraine. However, there are certain

difficulties on the way of implementing these teaching methods. First of all, the problem is the formation and widespread implementation of a unified educational information space of Ukraine, as well as elements of its reliable scientific support. The next problem is the difficulty of deploying and improving the necessary infrastructure elements of regional information and telecommunications networks. They are interconnected with each other, as well as with the global network. This allows in the long term to overcome the “digital divide” in different regions of Ukraine, especially in rural areas. Another problem was the low level of information and communication and technological competence of both students and teachers. In particular, the use of outdated methods by the latter during the educational process and the low level of motivation of students are also reflected in attempts to master new ways of learning. The fourth problem is the lack of an established national policy on the use of information and communication technologies in the pedagogical sphere, outdated legislative and legal framework, conservative in nature and not conducive to the construction of an information society in Ukraine, so as a consequence, it leads to a slowdown of digitalization of educational processes in Ukraine.

However, in the context of the Russian-Ukrainian war, the economic factor comes first. Cost reduction, which is characteristic of distance learning, is extremely important when the military confrontation continues, when the main budget funds are allocated for defense purposes. Distance learning, therefore, will not require significant capital investment. Problems with the supply of energy resources to Ukraine are already evident. Consequently, reducing the cost of space heating, for example, offers extremely important savings in the current circumstances. In addition, with the probable air threat and missile attacks, which Russia also makes on civilian objects and infrastructure, it is much safer not to concentrate large numbers of people in one building.

The experience of Saudi Arabia is also important. In Ukraine, men and women study together, but the problem of access to educational resources is exacerbated. A report by Saudi officials cited empirical calculations that showed that distance education attracts residents from remote parts of the state. For Ukrainian students who are partially outside Ukraine or live as temporarily displaced persons outside their settlements, this option is quite optimal. Therefore, we believe that education using digital technologies in Ukraine has all chances for further development, caused both by its direct advantages and peculiarities of functioning of the educational sphere in Ukraine in the realities of Russian military aggression.

5. Conclusions

So, the COVID-19 pandemic caused a crisis that, on the other hand, facilitated the deployment of technological innovations. Remote working models could not exist without the necessary level of digital development. Online work has greatly increased the demand for regulatory mechanisms for digital communication. At the same time, there has been a marked expansion and improvement of existing digital educational platforms, which have become available worldwide. Users began to increasingly choose distance learning based on various online platforms, courses, or webinars. In Ukraine, the situation has been exacerbated by Russia's full-scale aggression. After February 24, 2022, there was a new need to expand the network of digital platforms for online learning. At the initiative of the Ukrainian authorities, together with international organizations, several digital resources for distance learning were created for both children and students from institutions of higher education. The advantages of using digital technologies in distance learning are obvious. As shown by U.S. experience, distance learning is cheaper and more productive, because it leaves more time for students to improve themselves and implement their projects, and for teachers - to conduct research. The example of Saudi Arabia shows that the use of digital technologies and distance learning can cover a large number of students, which is extremely important for Ukraine in the conditions of military operations. We believe that distance education using digital technology in Ukraine should develop further because it has certain advantages and features of functioning in the realities of Russian military aggression. Its use will save budget funds, guaranteeing the maximum involvement of teachers and students in the educational space. However, SW-analysis showed that the modern remote system is still far from ideal. Although there are many of its advantages, the disadvantages are significant. So, its use requires solving certain problems: improving the qualifications of educators, solving problems with the same access to the Network in urban and rural areas, outdated legal and legislative norms regulating the educational process, etc. The future development of distance education will need significant reformation, especially the development of new distance platforms (primarily state ones), or the improvement of existing ones. These problems will require additional research in the future.

References

Abbasi, A., & Foudi, M. (2020). The E-Learning future in Algeria. *Journal of Distance Learning and Open Learning*,

- 8(14), 75-102. <https://doi.org/10.21608/jdlol.2020.78696>
- Abuhassna, H., Al-Rahmi, W. M., Yahya, N., Zakaria, M. A. Z. M., Kosnin, A. B. M., & Darwish, M. (2020). Development of a new model on utilizing online learning platforms to improve students' academic achievements and satisfaction. *International Journal of Educational Technology in Higher Education*, 17(1), 1-23. <https://doi.org/10.1186/s41239-020-00216-z>
- Andersone, R. (2020). Innovations in the improved curriculum content of the competence Approach: a case study in Latvia. *Rural Environment. Education. Personality (REEP)*, 13, 213-218. <https://doi.org/10.22616/reep.2020.025>
- Ayoub, A., Amin, R., & Wani, Z. A. (2020). Contribution of developed countries towards MOOCs: An exploration and assessment from a representative platform Coursera. *Asian Association of Open Universities Journal*, 15(2), 251-262. <https://doi.org/10.1108/aaouj-03-2020-0016>
- Chan, R. Y., Bista, K., & Allen, R. M. (2021). *Online teaching and learning in higher education during COVID-19: International perspectives and experiences*. Routledge.
- Cherng, H.-Y. S., & Davis, L. A. (2019). Multicultural Matters: An Investigation of Key Assumptions of Multicultural Education Reform in Teacher Education. *Journal of Teacher Education*, 70(3), 219-236. <https://doi.org/10.1177/0022487117742884Cherng>
- Cleveland-Innes, M. F., & Garrison, D. R. (2020). *An introduction to distance education: Understanding teaching and learning in a new era*. Routledge.
- Demiray, U. (2017). Is Digital Age “A Tsunami” for Distance Education?: Functional Roles of Scaffolding and Meta-Communication in Digital Learning Environment. In S. Şad, & M. Ebner (Eds.), *Digital Tools for Seamless Learning* (pp. 179-194). IGI Global. <https://doi.org/10.4018/978-1-5225-1692-7.ch009>
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5-22. <https://doi.org/10.1177/0047239520934018>
- Digital platforms for learning, self-development and receiving help and verified information*. (2022, March 17). Retrieved July 3, 2022, from <https://mon.gov.ua/ua/news/distancijni-platformi-dlya-navchannya-samorozvitku-ta-otrimannya-dopomogi-j-pe-revirenoyi-informaciyi>
- Ehlers, U.-D. (2019). Future Skills and Higher Education “Future Skill Readiness”. *EDEN Conference Proceedings*, 1, 85-96. <https://doi.org/10.38069/edenconf-2019-ac-0011>
- Hanifa, M. R., Santoso, H. B., & Kasiyah. (2019). Evaluation and recommendations for the instructional design and user interface design of Coursera MOOC platform. *2019 International Conference on Advanced Computer Science and Information Systems (ICACSIS)*. <https://doi.org/10.1109/icacsis47736.2019.8979689>
- Kem, D. (2022). Personalised and adaptive learning: Emerging learning platforms in the era of digital and smart learning. *International Journal of Social Science and Human Research*, 5(2), 385-391. <https://doi.org/10.47191/ijsshr/v5-i2-02>
- Korniichuk, O. Y., Bambyzov, L. M., Kosenko, V. M., Spaska, A. M., & Tsekhmister, Y. V. (2021). Application of the case study method in medical education. *International Journal of Learning, Teaching and Educational Research*, 20(7), 175-191. <https://doi.org/10.26803/ijlter.20.7.10>
- Kumar Basak, S., Wotto, M., & Bélanger, P. (2018). E-learning, M-learning and D-learning: Conceptual definition and comparative analysis. *E-Learning and Digital Media*, 15(4), 191-216. <https://doi.org/10.1177/2042753018785180>
- Lash, M., Madrid Akpovo, S., & Cushner, K. (2020). Developing the intercultural competence of early childhood preservice teachers: Preparing teachers for culturally diverse classrooms. *Journal of Early Childhood Teacher Education*, 43(1), 1-22. <https://doi.org/10.1080/10901027.2020.1832631>
- Lopes, A., & Soares, F. (2022). *Online distance learning course design and multimedia in E-learning*. IGI Global.
- Mbah, R. E., & Wasum, D. (2022). Russian-Ukraine 2022 war: A review of the economic impact of Russian-Ukraine crisis on the USA, UK, Canada, and Europe. *Advances in Social Sciences Research Journal*, 9(3), 144-153. <https://doi.org/10.14738/assrj.93.12005>
- Merenuk, K. (2021). “Tournaments” and “games” in Rus’: Tradition or single mentions? *Problems of the History of*

- Wars and Martial Arts*, 3, 57-69. Retrieved from https://shron1.chtyvo.org.ua/Mereniuk_Khrystyna/Tournaments_and_games_in_Rus_tradition_or_single_mentions7.pdf?
- Pinheiro, M. M., & Santos, V. (2022). Building the future of distance and online learning. In A. Lopes, & F. Soares (Ed.), *Online Distance Learning Course Design and Multimedia in E-Learning* (pp. 114-141). IGI Global. <https://doi.org/10.4018/978-1-7998-9706-4.ch005>
- Rajab, K. D. (2018). The effectiveness and potential of E-learning in war zones: An empirical comparison of face-to-face and online education in Saudi Arabia. *IEEE Access*, 6, 6783-6794. <https://doi.org/10.1109/access.2018.2800164>
- Ransaw, T. S., & Majors, R. (2017). *Emerging issues and trends in education*. MSU Press.
- Suri, D., & Chandra, D. (2021). Teacher's strategy for implementing multiculturalism education based on local cultural values and character building for early childhood education. *Journal of Ethnic and Cultural Studies*, 8(4), 271. <https://doi.org/10.29333/ejecs/937>
- Tsekhmister, Y. V., Konovalova, T., Tsekhmister, B. Y., Agrawal, A., & Ghosh, D. (2021). Evaluation of virtual reality technology and online teaching system for medical students in Ukraine during COVID-19 pandemic. *International Journal of Emerging Technologies in Learning (iJET)*, 16(23), 127-139. <https://doi.org/10.391/ijet.v16i23.26099>
- Ungerer, L. (2019). Digital storytelling: Possible applications in an open distance E-learning environment. *Storytelling: Global Reflections on Narrative*, 74-87. https://doi.org/10.1163/9789004396401_012
- Zampieri, N., & Castellani, R. (2022). COVID-19: The virus that stopped the world. A child perspective. *Journal of Distance Learning and Open Learning*, 10(18), 37-43. <https://doi.org/10.21608/jdlol.2022.222754>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).