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VIII
INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE "INTEGRATION OF SCIENTIFIC AND MODERN IDEAS INTO PRACTICE"

Stockholm, Sweden
November 15 - 18, 2022

ISBN 979-8-88831-926-0

DOI 10.46299/ISG.2022.2.8

INTEGRATION OF SCIENTIFIC AND MODERN IDEAS INTO PRACTICE

Proceedings of the VIII International Scientific and Practical Conference

Stockholm, Sweden
November 15 – 18, 2022

UDC 01.1

The 8th International scientific and practical conference “Integration of scientific and modern ideas into practice” (November 15-18, 2022) Stockholm, Sweden. International Science Group. 2022. 844 p.

ISBN – 979-8-88831-926-0
DOI – 10.46299/ISG.2022.2.8

DIGITAL TOOLS OF DIGITAL EDUCATIONAL ECOSYSTEMS IN THE STUDY OF EDUCATIONAL DISCIPLINES OF THE MATHEMATICS CYCLE

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A distinctive feature of modern society is the dynamism of its development, the uncertainty, and the instability of the processes taking place in it. The existing transformation of the post-industrial society is determined by information, which is a unique resource for acquiring knowledge created by a person in the process of his activity. The trend towards an ecosystem approach extends to all spheres of life, including education. The digital ecosystem of the modern teacher is not only a requirement of the time but also a means that promotes the development of professionalism. This ecosystem is being transformed by expanding teachers' knowledge of digital technologies, forming skills and abilities to work with digital tools, information, and digital competencies through the use of already existing digital platforms Google, Moodle, Microsoft, and others. Therefore, digitalization is a relevant and promising direction for the development of the education system of Ukraine. The issue became even more acute first due to the COVID-19 coronavirus pandemic, quarantine measures and the need to implement distance and blended learning, and then due to the start of the war in Ukraine.

The purpose of our research is to analyze the possibilities of using digital tools of digital ecosystems in the modern education system.

Education is a reflection of the changes taking place in society. The beginning of the new millennium brought fundamental changes in the understanding of the goals and tasks of education, as well as the methods used to solve them. Modern innovative processes in society require a person to have high professional competence, which is necessary for mastering new technologies. The consequence of this is increased

attention to the level of the intellectual development of the individual, and the ability to learn throughout life.

General computerization determined the need to develop new approaches in the field of educational services, which should be based on knowledge and communication skills related to human abilities for self-development.

Today, the ecosystem approach transforms the process of learning, thinking, and life as a whole in accordance with the principles of interconnection and cooperation. This approach is now actively spreading to all spheres of life in society, in particular to education. The digital ecosystem is a new step at the stage of the digital transformation of pedagogical education. Existingecosystems of educational organizations are an indispensable attribute of digitalization. The growth of interest in ecosystems is explained by the emergence of a wide range of digital technologies that allow members of the pedagogical community to interact in the process of their activities, to quickly and dynamically provide interested parties with relevant educational and scientific and pedagogical information.

Mixed education makes it possible to combine traditional methods and current technologies. Thanks to the digital tools of the Google and Moodle platforms, it becomes possible to use web technologies, which allows not only to access educational materials of various types (text, graphics, multimedia), but also to work r a teacher or a group and communicate offline or online.

Scientists pay great attention to the issue of using digital tools in the educational process. The social and cultural essence of informatization and its impact on the education system are presented in the scientific works of V. Bykov, V. Kremen, and M. Kirichenko [1]. Theoretical and practical studies related to the development of the digital competence of pedagogical workers were carried out in the works of I. Vorotnykova, G. Degtyareva, N. Morse, and others. [2]. Various aspects of digital educational ecosystems were considered in the studies of scientists O. Kokhanovskaand N. Slyusarenko. A comparison of the characteristics of Google services was described by O. Humennyi and I. Paddy, the implementation of Google cloud services in the information and educational space of higher education institutions was considered by V. Oleksyuk, and N. Kononets analyzed the possibilities of using Google Drive for organizing the educational process, creating electronic educational and methodological complexes disciplines and assessed the advantages and disadvantages of its use as a means of resource-oriented teaching of computer cycle disciplines. V. Demeshkevich considered the peculiarities of using Google services in the activities of pedagogical workers. Possibilities of blended learning as a model of using distributed information and educational resources in face-to-face learning with the use of elements of asynchronous and synchronous distance learning, in which the online session is an addition to the traditional course, are considered in the publication of K. Lisetskyi [3], [4].

Almost all researchers pay attention to the fact that the use of digital tools in the educational process is highly effective. Information and communication technologies not only facilitate access to information and open opportunities for the variability of

educational activity, its individualization and differentiation , but also help to organize the interaction of all subjects of education in a new way.

The process of training future specialists in higher education institutions (HEIs) in mathematical disciplines, in particularly such as "Higher Mathematics", "Theory of Probability and Mathematical Statistics", "Engineering Mathematics" and others, has a number of features, namely: the presence of a theoretical structure of each discipline; understanding that mathematics is built according to the laws of logic and therefore requires a correspondingly clear logical thinking that develops in the process of studying mathematical disciplines; a deep understanding of the material of mathematical disciplines is determined by their practical orientation. Therefore, today, the most common form often Ching mathematical disciplines remains the lecture, which has undergone a certain modernization, where the teacher most often presents educational material using the explanatory and illustrative method and multimedia technologies.

Educators are part of an ecosystem, which is a complex network of living (teachers, school leaders, the public) and non-living (digital systems, curricula, resources and tools) organisms. The goal of a learning management system is to use digital tools to create strong and meaningful connections within the education ecosystem. The most common global digital ecosystems used by educators are Google, Microsoft, and Moodle [5].

By creating an interactive educational course on the Moodle platform, you can use Google's digital tools to activate the student's educational activities.

Google's basic digital tools have become a powerful toolkit for organizing training in the web space, as they have all the possibilities for organizing training using theInternet. They support collaboration, enable users to contribute their own content, facilitate formal and informal learning, ensure rapid dissemination, and improve control of results. Google's digital tools enable students to use services to complete tasks with the ability to access personal files from any computer with Internet access.

So, with the help of Screenity, you can make videos and display them on the site, and with the help of Capture Editor, you can take screenshots of the screen or a given area.

Google forms allow conducting surveys and testing.

In modern conditions, when many universities have to work in a mixed mode, the issue of recording classes and publishing them on the YouTube channel is becoming very relevant.

The use of Google Sheets is also very convenient and useful when conducting laboratory classes. Of course, this requires appropriate preparatory work from e. During the class, students perform the tasks, and the teacher has the opportunity to observe the entire group at the same time and provide comments, and if necessary, can immediately correct the error. At the end of the lesson, you can evaluate the work of each student.

Thus, the experience of educational activity proves that the combination of the possibilities of using Google and Moodle services help teachers of educational disciplines of the mathematical cycle to activate the cognitive activity of students, to

increase motivation to study mathematical disciplines, which contributes to the improvement of the quality of their education. The use of digital ecosystems in education proves that the end-to-end digitalization of education in modern conditions has led to a total rethinking of forms and methods of teaching in the conditions of distance and mixed education. Today, maximum immersion in the information and cognitive environment with the help of such digital ecosystems as Google, Microsoft, Moodle is required, which involves the integration of popular online resources used by modern teachers during classes, or to create your own ecosystem of online resources for teaching.

References

1. https://core.ac.uk/download/pdf/11084479.pdf.
2. https://journals.us.edu.pl/index.php/IJREL/article/view/13794/11062.
3. http://kamts1.kpi.ua/naukovi-publikatsii-u-2018-2019-rr-statti-chastyna-2/.
4. https://ucci.org.ua/uploads/files/58e78ee3c3922.
5. https://visnyk.chnpu.edu.ua/wp-content/uploads/2022/09/Slyusarenko-N.-Kokhanovska-O.pdf.
6. http://eprints.cdu.edu.ua/id/eprint/4142.
7. http://www.niss.gov.ua/articles/1191/#_ftn2.
8. http://ru.calameo.com/read/0051436721611e6750f8b.
9. http://galanet.at.ua/publ/1-1-0-5.
10. https://sites.google.com/site/elektiv10/home/web-2-0-servisy-google.
11. http://https//sites.google.com/view/cloudinedu/%D0%B3%D0%BE%D0%BB%D0%BE%D0%B2%D0%BD%D0%B0?authuser=0.
12. https://uk.wikipedia.org/wiki/Google_Workspace#%D0%9F%D1%80%D0%BE%D0%B4%D1%83%D0%BA%D1%82%D0%B8.