USING GOOGLE PRODUCTS AS A NECESSITY DURING ONLINE, REMOTE OR BLENDED LEARNING IN HIGHER EDUCATION INSTITUTIONS

ВИКОРИСТАННЯ ПРОДУКТІВ GOOGLE ЯК НЕОБХІДНІСТЬ ПІД ЧАС ОНЛАЙН-НАВЧАННЯ, ДИСТАНЦІЙНОЇ, АБО ЗМІШАНОЇ ФОРМИ НАВЧАННЯ У ВИЩИХ НАВЧАЛЬНИХ ЗАКЛАДАХ

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Стаття досліджує роль та вплив сервісів Google на навчання студентів у вищих навчальних закладах під час онлайн-навчання, дистанційної, або змішаної форми навчання, надаючи обґрунтування переваг їх використання. Виділено сервіси Google, які безпосередньо впливають на активізацію та інтенсифікацію процесу навчання (Google Classroom, Google Calendar, Google Forms, Google Meet, Google Sheets, Google Docs, Google Slides, Hangouts). Продукти Google полегшують життя викладачів, коли вони планують свої заняття ефективно для оптимальних освітніх результатів. Умови пандемії у всьому світі (COVID-19) та війни в Україні вимагають швидкої адаптації до нових технологій та дистанційного навчання для всіх. Використання інформаційних комп'ютерних технологій в освітньому процесі в закладах вищої освіти спрощує процес подання інформації, допомагає швидше опрацьовувати матеріали та з легкістю користуватися одержаними результатами спільної роботи викладачів та студентів. Використання мобільних додатків, програм та платформ не тільки значно спрощує роботу педагогів, але й робить навчання студентів більш цікавим, сучасним, продуктивним та наповненим. На сьогоднішній день існує багато різноманітних платформ і інструментів, спрямованих не лише на збагачення освітнього процесу, а й на розвиток особистості та вдосконалення навичок студентів, адаптації до діджиталізації у XXI столітті. Наш світ щодня змінюється, що вимагає від людей постійного покращення своїх знань, можливостей та навичок. Викладач, який володіє мультимедійним контентом, є не лише конкурентоздатною постаттю на ринку праці, але й наставником, що передає навички, важливі для майбутніх поколінь. У сучасному контексті освітні платформи та додатки відіграють ключову роль у навчанні студентів, надаючи можливість вчитися в будь-який час та з будь-якого місця.

Ключові слова: *сервіси Google, онлайн-навчання, дистанційна форма навчання, змішана форма навчання, хмарні сервіси, освіта, студенти, діджиталізація, вищі навчальні заклади.*

The article explores the role and impact of Google services on student learning in higher education institutions during online, remote or blended learning, providing a rationale for the advantages of their utilization. It highlights Google services that directly influence the activation and intensification of the learning process (Google Classroom, Google Calendar, Google Forms, Google Meet, Google Sheets, Google Docs, Google Slides, Hangouts). Google products contribute to the well-being of academic professionals as they plan their sessions efficiently for optimal educational outcomes. The global pandemic (COVID-19) and the war in Ukraine demand swift adaptation to new technologies and remote learning for everyone. The use of information computer technologies in the educational process in higher education institutions simplifies the information presentation process, aids in processing materials more quickly, and facilitates the easy utilization of the results obtained through collaborative work between teachers and students. The use of mobile apps, programs, and platforms not only significantly simplifies educators' work but also makes students' learning more interesting, modern, productive, and enriched. Presently, there are numerous platforms and tools aimed not only at enriching the educational process but also at developing students' personalities and enhancing their skills, adapting to digitization in the 21st century. Our world is changing every day, requiring individuals to continually improve their knowledge, capabilities, and skills. A teacher proficient in multimedia content is not only a competitive figure in the job market but also a mentor imparting skills crucial for future generations. In the modern context, educational platforms and applications play a key role in students' learning, offering the opportunity to study anytime and from anywhere.

Key words: *Google services, online learning, remote learning, blended learning, cloud services, education, students, digitization, higher education institutions.*

Formulation of the problem. The rapid development of information and communication technologies and their active integration into all spheres of human activity require innovative approaches to modernize the current education system, especially in the context of the educational process in higher education institutions. The use of information technologies offers new means of education to the educational process. The application of digital technologies in the educational process is evident in the use of mobile devices both in organizing education and in the teaching process, leveraging social networks with their diverse capabilities, cloud technologies, remote management of information flows, and more. These aspects contribute to a change in the way the educational process is managed in higher education institutions from traditional to more flexible and mobile. Tackling the mentioned challenges while preparing for classes in higher education institutions during online learning, remote, and blended education can be achieved by leveraging contemporary cloud services, with a specific focus on Google services.

Analysis of recent research and publications. The study's theoretical foundation relied on the extensive research of scientists who delved into the utilization of Google products, specifically: A. S. Karpenko, V. Nemchenko, N. M. Hrabyk, O. Lytvyn, D. Kurniawati and S. Lestari, S. Jazil, L. A. Manggiasih, K. Firdaus, P. M. Chayani, S. N. Rahmatika, Yu. G. Lotyuk, Rassovytska M. V., Mafa, K. R., Vakalyuk, T. A., Amin, E. A. and others.

Highlighting previously unresolved aspects of the overarching problem. The question of using Google services to enhance the educational process and improve the quality of higher education is relatively underexplored. In the context of our research, it is crucial to focus on the significance and impact of Google services on the process of online learning, remote, or blended forms of education in higher educational institutions.

The aim of the article is to analyze the features of Google services and substantiate the advantages of their utilization. Accordingly, the primary objective of the article is to analyze and define the possibilities offered by Google products and provide practical recommendations for educators in higher education institutions and students.

The presentation of the main material. Let us start by explaining the forms of education, such as online learning, distance, and blended learning.

Online learning is an educational approach where students engage in a completely virtual setting. It involves an internet-based learning environment that brings together students with diverse backgrounds and perspectives. Higher education institutions typically employ a Learning Management System (LMS) to support e-learning, which may occur asynchronously (allowing students to participate without being online simultaneously, using discussion threads and emails) or synchronously (requiring students to be online simultaneously) [4].

Remote learning involves the absence of physical presence between the student and the educator or information source, departing from the conventional classroom setup. Technology serves as the medium for information exchange, employing tools like discussion boards, video conferencing, and online assessments. It can happen synchronously, featuring real-time interaction and collaboration, or asynchronously, with self-directed learning activities independent of the instructor. Remote learning encompasses diverse formats and methods, primarily occurring online. Numerous online tools are accessible for communication with students, submission of assignments, and dissemination of educational materials [5].

Blended learning is a contemporary educational technology that combines traditional classroom activities with elements of distance learning technologies. It is based on new didactic possibilities provided by information and computer technologies, as well as modern educational tools [16, p. 12].

Let us take a closer look at blended learning. According to V.P. Holovenkin, applying blended learning principles allows achieving several goals:

– Expanding students' educational opportunities by increasing accessibility and flexibility, considering their individual educational needs, pace, and rhythm of material mastering;

– Stimulating the formation of an active student position, enhancing motivation, independence, social activity, including the acquisition of educational material, and consequently, improving the overall effectiveness of the educational process;

– Transforming the teacher's style from knowledge transmission to interactive interaction with students, facilitating the construction of students' own knowledge;

– Optimizing the amount of teaching load on educators by reinforcing student self-study;

– Reducing the per-student cost of education by diminishing the share of classroom work in study groups and lecture streams below the normative size [16, p. 12].

Therefore, we believe that the widespread integration of Google services into the educational process is currently gaining prominence, contributing to the realization of blended learning principles. According to M.V. Rassovitska, preparing competitive and professionally mobile specialists today is impossible without introducing elements of mobile learning into the educational process and fostering the skills of using cloud and mobile technologies in professional activities, given their widespread use in drafting design documentation, performing calculations, spreadsheet computations, managing complex projects and models, etc. [25, p. 66].

Y.G. Lotyuk rightfully notes that using cloud services enhances the quality of higher education student preparation and improves teacher-student interaction [23, p. 67].

Google services serve various purposes: storing materials (documents, presentations), communication (through Gmail, Hangouts), and, most importantly, organizing educational activities (Google Classroom, Google Calendar, educational websites). The experience of foreign universities utilizing Google's cloud services is noteworthy. Analyzing their experience revealed several advantages: reducing system maintenance time, significantly strengthening students' motivation to study the discipline, developing creative skills and student collaboration improvement, enhancing effective teamwork between teachers and students [21, p. 52].

Technological integration in education leads to full automation, creating time and space for teachers and students. The synergy of education and technology, using digital tools, emphasizes practical application

over theory, making learning engaging. Online courses replace traditional lectures, offering flexibility for students. Virtual reality enhances practical learning. Google products aid knowledge-sharing, with instructors leveraging them for supplementary information, assignments, and increased accessibility in learning [6, p. 239–240; 13; 7; 10].

Among the existing technologies, certain Google services play a crucial role in activating and intensifying the educational process in higher education institutions:

– Google Classroom, a free cloud service from Google designed for educational institutions, enables instructors to efficiently generate and evaluate assignments electronically. The platform automatically organizes assignments and students' work into a structured format on Google Drive, providing clarity for both educators and students. Serving as an educational management system, Google Classroom utilizes cloud technologies and modern web services [19; 9, p. 126].

Document storage in the Learning Management System (LMS) ensures the safety of essential files for lecturers and students. Google Classroom offers free and convenient storage, enabling learners to access assignments, attendance lists, materials, and grades. The application provides a structured view for easy access to cloud-based activities, ratings, assignments, and learning materials. Teachers can efficiently centralize e-learning materials for enhanced accessibility [12].

Utilizing Google Classroom in higher education enables individualized learning, interactive oversight of task completion, and leverages both individual and group methodologies online. This approach boosts learning motivation and serves as a conduit for realizing the concept of resource-oriented education. In conclusion, Google Classroom, a free cloud service, proves convenient for lecturers and students across various specialties [20; 14].

The study confirms Google Classroom as a powerful and effective tool for higher education instruction and learning, preferred over traditional in-class methods. Learners benefit by dedicating more focused time in their own space. Instructors in higher education institutions are advised to utilize this platform to reinforce lectures, emphasizing its benefits for individual learning and enabling continuous education beyond traditional classroom settings [8].

– Google Calendar: Allows tracking important events, forming work schedules, and sending announcements and invitations [18, p. 5].

– Google Forms: Enables the creation of surveys, quizzes, and questionnaires, fostering continuous communication between teachers and students [11].

– Google Slides: Facilitates creative problem-solving and collaborative task execution [1, p. 401].

– Google Sheets: Permits the creation of electronic grading journals and monitoring student task performance [17; 24].

– Google Docs: Encourages collaborative writing, focusing not only on content but also on form, promoting active written communication [17; 24].

– Google Meet: Facilitates large-scale student participation in virtual meetings, an essential criterion for educational platform selection [22]. The use of Google Meet allows connecting a large number of students to a meeting [22]. This feature is a significant criterion for choosing this service for education. Additionally, the requirement for Google Meet users to have a registered Gmail account [15] is not an issue, as all students are provided with a Google account for using the Google Classroom platform. During practical sessions via Google Meet, material is explained through material demonstrations stored on Google Drive, and students are granted access for easier comprehension and independent preparation. Most senior students combine their studies with work in various fields. However, their conscious approach allows them to attend classes remotely by joining via Google Meet. Using this service enables the completion of practical tasks both online and independently offline, through shared access to Google Sheets and Google Docs [17; 24].

Collaborative access allows students to work on group projects at a time convenient for each participant. Google Hangouts / Google Chat, a unified communications service, facilitates text, voice, or video chats for individuals or groups, integrated into Google+ and Gmail. Mobile Hangouts apps are available for iOS and Android devices [3].

Conclusions. Having considered the main functions and capabilities of Google services, the advantages of their use in the educational environment have been substantiated and will be very helpful during distance learning in higher education institutions. An education system that employs digital technologies and innovative teaching methods aims for maximum efficiency and a user-friendly experience for both teachers and students.

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