ADVANTAGES AND RISKS OF USING THE GOOGLE MEET SERVICE FOR THE CONDUCT OF ONLINE LESSONS

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In the article, the authors highlight the relevance of the problem of using the Google Meet service for conducting online classes. Attention is drawn to the fact that, according to Google Trends, over the past three years, Google Meet has taken a leading position in Ukraine among the most popular video conferencing platforms. Emphasis is placed on the promising possibilities of this service in the educational process and its significant didactic potential. The active implementation of

Google Meet in educational practice is due to its economic, technical, technological advantages, and didactic advantages. Important among them are the absence of fees for the use of the resource; intuitive interface; high level of security and quality of communication; the presence of a traffic and battery saving mode; ease of screen sharing to deliver documents, spreadsheets, or presentations, etc. Emphasis is placed on the advantages of organizing new forms of interaction between education seekers and teachers in the educational process: the possibility of chat is available; synchronization with contacts in the Google account; integration into various calendar planning systems; no time limit for video meetings; availability of Jambord virtual board; support for inclusive learning conditions and others. Considered additional benefits and advanced features of Google Meet available in Google Workspace for Education: scalability, availability of the «Video recording» function, organization of polling during the video meeting, breakout sessions, etc. At the same time, the authors draw attention to certain limitations and risks that may arise during the active use of this service. Emphasis is placed on the factors that restrain and inhibit the active process of introducing the Google Meet service into educational practice.

Keywords: online lessons, Google Meet service, educational process.

Кисельова О.Б., Хміль Н А., Четаєва Л..П. «Переваги та ризики використання сервісу Google Meet для проведення онлайн-занять».

У статті авторами висвітлено актуальність проблеми застосування сервісу Google Meet для проведення онлайн-занять. Акцентується увага на тому, що за показниками в Google Trends протягом останніх трьох років Google Meet займає лідерську позицію в Україні серед найбільш популярних платформ для проведення відеоконференцій. Наголошено на перспективних можливостях цього сервісу в освітньому процесі та його значному дидактичному потенціалі. Активне впровадження Google Meet в освітню практику зумовлене як економічними, техніко-технологічними, так і його дидактичними перевагами. Серед них важливими є відсутність плати за використання ресурсу; інтуїтивно

зрозумілий інтерфейс; високий рівень безпеки та якість зв'язку; наявність режиму економії трафіку та заряду батареї; простота спільного використання екрану для надання документів, електронних таблиць або презентацій тощо. Акцент зроблено на перевагах щодо організації нових форм взаємодії здобувачів освіти з педагогом в освітньому процесі: доступна можливість чату; синхронізація з контактами в гугл-акаунті; інтеграція в різні системи календарного планування; відсутність обмеження у часі проведення відео зустрічей; наявність віртуальної дошки Jambord; підримка інклюзивних умов навчання та інші. Розглянуто додаткові переваги та розширені функції Google Meet, доступні в Google Workspace for Education: масштабність, наявність функції «Запис відео», організація опитування під час відеозустрічі, сеансів підгруп тощо. Водночас, автори привертають увагу й до певних обмежень і ризиків, які можуть виникати під час активного застосування цього сервісу. Наголошено на чинниках, якими стримується й гальмується активний процес упровадження сервісу Google Meet в освітню практику.

Ключові слова: онлайн-заняття, сервіс Google Meet, освітній процес.

Relevance of research. In the conditions of modern challenges faced by educators, there is an urgent need to apply new forms and methods of interaction with education seekers, the transformation of existing teaching methods and techniques. Thus, there was a need to conduct classes in an online format through synchronous video communication sessions with a built-in function of group chats, a presentation of the speaker's screen, etc. A successful selection of services contributes to the achievement of educational goals. One of the services adapted for educational needs and easy to use is Google Meet, a free service for organizing and holding video conferences, which can be installed not only on a personal computer (PC), but also on any gadget (as an application).

Analysis of recent research and publications. Scientists drew attention to the problems of implementation and use of information and communication technologies in the educational process (N. Balik, V. Bykov, I. Voytovych, R. Gurevich,

M. Zhaldak, M. Zadorozhna, M. Kademiya, L. Kartashova, V. Kukharenko, A. Manako, N. Morse, V. Osadchii, O. Spirin, and others).

Under the influence of the active spread of the Internet, a new direction of informatization of education was formed – the Internetization of the educational process. In this aspect, the scientific researches of N. Balik, V. Bykov, V. Kuharenko, N. Morse, V. Osadchii, I. Sokol, A. Stryuk, and others are of particular interest.

The problem of organizing interaction between participants in the educational process during online learning using various Internet resources has become the subject of research by a significant number of foreign and Ukrainian scientists, among whom the works of A. Bukach, O. Gaitan, N. Hnedko, T. Dumanskaia are of interest. S. Zaitseva, A. Karpenko, Ya. Martynenko, M. Medvedeva, U. Ostapchuk, S. Parshukov, O. Stechkevich, and other scientists.

Based on the indicators in Google Trends, it should be noted that Google Meet has been the leader among the most popular video conferencing platforms in Ukraine for the past 3 years (Fig. 1).
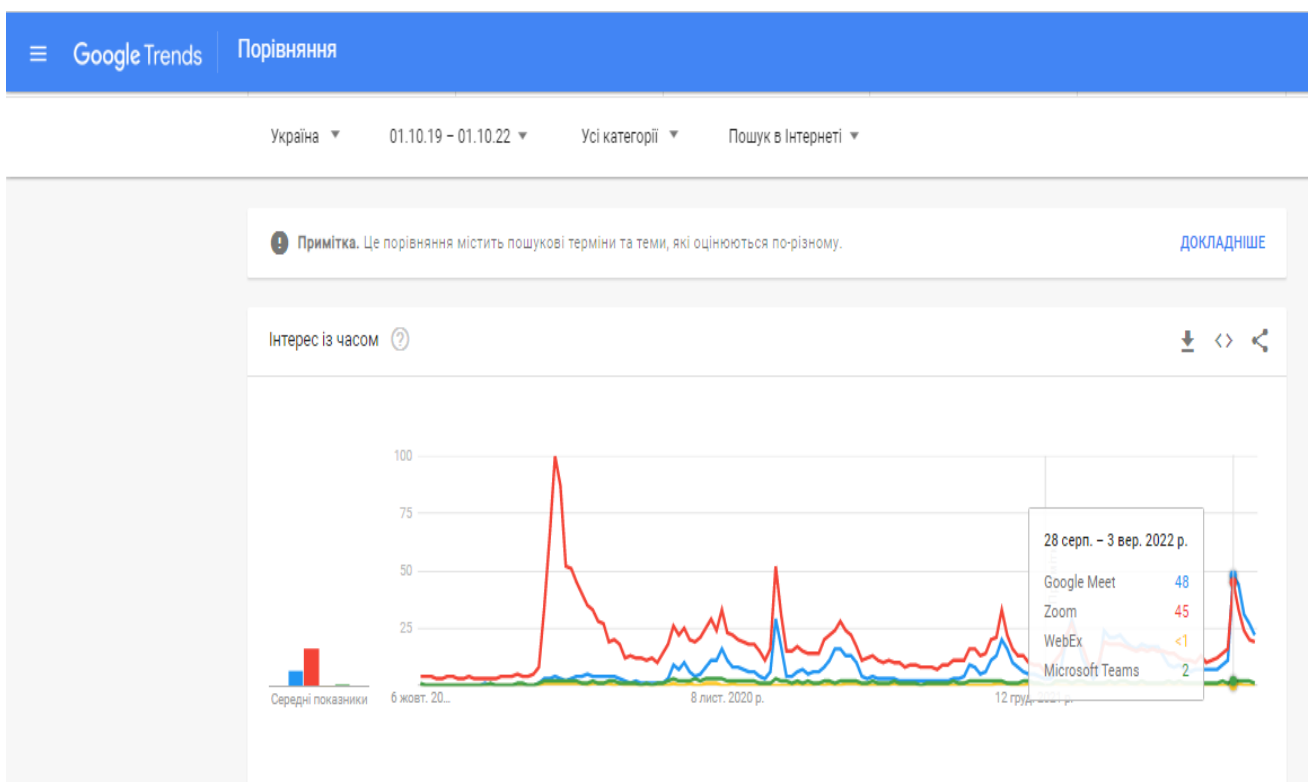

Fig. 1. Screenshot of the query in Google Trends

However, not enough attention has been paid to highlighting the advantages and disadvantages of one of the video conferencing services popular among teachers, Google Meet, as a productive means of online learning.

The purpose of the article. Identify and characterize the advantages and risks of using the Google Meet service during online classes.

Presentation of the main material. Currently, widely used web services that support a non-traditional way of online interaction at a distance using audio and video communication: Cisco Webex Meetings, Zoom, Google Hangouts, Skype, VideoMost, Mind, Amazon Chime, Polycom, Linkchat, Vidyo, GoToMeeting, Discord webinar rooms, BigBlueButtonBN (BBB) (on LMS Moodle platform) and more. However, although some versions allow for slightly more advanced functionality, most of them require additional software to be downloaded and the free versions have time limits for video calling. To choose the right service, it is necessary to form clear tasks that are planned to be performed with the participants during the video meeting, and certain expectations regarding use [5]. We share the opinion of C. Dong, D. Wai-Ching Lee, and others, that «there are many educational tools on the Internet that also have mobile applications. The best one should be the one that suits your specific needs. With any new online technology, the program can be difficult for novice users. Thus, first of all, the educational tool should be convenient to use for both teachers and students» [4, p. 59]. In addition, important arguments in favor of the choice and use in the educational process of this or that service for the organization of video communication are taking into account their economic, technological, and didactic advantages.

One of the simple, reliable, functional, and free services of synchronous video communication is Google Meet, which consists of applications Meet (for group video communication) and Chat (for creating group chats). Since March 2020, in connection with the COVID-19 pandemic, it has been announced that the program will be available for free [7].

Its use in the educational process ensures the productive conduct of online classes, meetings of higher education applicants, conferences, consultations, educational events, etc.

Based on research [1; 2; 3; 5; 9; 12; 15 and others] and our own pedagogical experience, we discovered the advantages of the Google Meet service and analyzed their content.

1. *Ease of use.* It does not require special skills from either the teacher or the students, it is available and does not require installation on a computer; to hold a video conference, it is enough to have a Google account.

2. *High level of security*. In Google Meet, meetings are secure, including hacking, and confidential. Joining the meeting is only by invitation or with the permission of the organizer.

3. *Work from any device.* You can work with the platform not only from a computer, using an up-to-date version of any web browser, that is, you do not need to install any software, but also from mobile devices (smartphone, tablet, etc.). To do this, you need to download and install the Google Meet application on your gadget [13].

4. *Availability of a virtual board Jambord*. During a video meeting in Google Meet, you can open a Jam file using Google Jamboard and in «screen demo» mode organize collaborative work to discuss ideas with students. The link to the board is automatically displayed in the chat.

5. *The screen demonstration* allows both the organizer of the video conference and the participants to show any educational material (presentations, images, videos, etc.), both the entire screen and one of the open windows. Content from Google Docs, Sheets, and Slides can easily be shown directly in Meet video meetings. Thanks to this, the principle of visibility is implemented, which contributes to the optimization of time, better assimilation of educational material, and activation of the educational process. The organizer can both allow the demonstration of the screen to the participants and prohibit it.

6. *Quick exchange of information in the chat.* The organizer can control the chat, in particular, to limit the sending of messages using the «allow everyone to send messages» function.

7. *Integration with various calendar planning systems,* including Google Calendar. Online classes can be scheduled in advance, which makes it easier for the teacher and students to coordinate the meeting time.

8. *Support for inclusive learning conditions*. Voice prompts and lives captions can help users with hearing and visual impairments during meetings.

The presence of automatic live captions generated by Google's speech recognition technology helps participants with hearing impairments, attention problems, language impairments, or in noisy environments to follow the speaker's words during video meetings. You can enable subtitles (available for English, Spanish, Portuguese, German, and French) by tapping the three dots on the Meet screen and selecting the appropriate option.

Screen readers and magnifiers. Visually impaired users are offered a built-in screen reader, full-page zoom, enhanced color contrast, and accessibility enhancements in Chrome.

9. *Parallel use of PC and smartphone.* It is possible to broadcast the voice when the teacher is near the blackboard, at a distance from the personal computer.

10. *Visual effects* and *background blur* allow you to apply and diversify the background of online meeting participants and avoid distracting meeting participants with the environment and preserve the privacy of your location during the broadcast. There is an option to turn on the background blur when the participant's image will be clear and all objects in the background will be blurred, or add your own or one of the proposed options (static or animated) background.

11. *The Support and Help Center* (https://support.google.com/meet/) offers comprehensive information on the terms of service with a brief overview, privacy policy, training articles, and Google Meet guides for both beginners and advanced users, and also promptly assists in solving problems. During the online meeting, you

can report a problem or privacy violation and send feedback, which will help to solve problems quickly and improve Google services.

12. *High quality of communication.* Google Meet adapts to the speed of the network to ensure high-quality communication during video meetings, wherever their participants are. New improvements based on artificial intelligence make the signal clear even in noisy environments [13].

13. *Noise suppression during a video meeting.* To improve audio quality, Meet has implemented a function to suppress background noise, such as the sounds of key presses, doors opening, and closing, or road construction outside your window. Artificial intelligence based on cloud technologies analyzes the incoming audio signal and cleans it of noise, passing the voice [13].

13. *Traffic and battery saving mode.* Before conducting a video meeting, you should turn on the economy mode in Meet, which will reduce the amount of traffic consumption, as well as reduce the load on the CPU, so that the battery is consumed more slowly.

14. *Uniqueness of meeting codes in Google Meet.* It is possible to create meetings in different ways and from different Google services, namely: Docs, Calendar, Chat, Classroom, Gmail, Nest, Jamboard, Hangouts, Google Meet subgroup rooms, Google Meet homepage (https://meet.google.com/), Google Meeting Room device, other third-party software such as Outlook. Each meeting is assigned a unique meeting code. Codes expire depending on the product from which the appointment was created.

15. *Saving the list of video meeting participants* and information about all held meetings. By installing a special free extension for the Google Meet Attendance List browser, the teacher has the opportunity to mark all those present in the class. The functionality of the application allows you to automatically create an attendance list and save it yourself, and view meeting histories. The data stored includes the date of the meeting and information about each participant; controls are integrated into the Google Meet meeting interface for easy access [14].

16. *Availability of the planning function.* Google Meet allows you to schedule a meeting in Google Calendar, that is, create a link for a meeting that will take place in the future.

It should be noted that the above benefits apply to the organization and conduct of online classes from a personal Google account. To use Google services at work or in an educational institution more effectively, you need a corporate account. For educational institutions, the Google Meet service, along with other tools for learning and teaching (for example, Classroom, Google Docs, Google Forms, and Google Chat), is available free of charge as part of the Google Workspace for Education Fundamentals package (https://edu.google.com/products/workspace-for-education/), formerly known as G Suit for Education. Different Google Workspace for Education options are available, and you can choose the one that best suits your organization's needs.

Let's briefly describe the additional available advantages and advanced functions of Google Meet.

1. *Magnitude. A significant number of participants.* Unlike Google Account users, who can host online meetings with up to 100 participants for up to 60 minutes each, educational institutions can host meetings with up to 250 participants from within and outside the institution, and live stream to a maximum of 100,000 viewers in the domain up to 300 hours in a row [13]. By default, each meeting has one organizer, but you can add up to 25 co-organizers during a meeting. Thus, with the help of the service, you can organize and conduct methodological associations, school-wide parent meetings, team meetings, large-scale educational web projects, etc.

2. *Automatic organization of online classes with Google ClassRoom.* The Google Meet link is now available on the side of the course stream, so students can easily join and instructors can manage the link from within the stream. Students will be directed to the waiting room until the instructor officially joins the class meeting link. Guests who are not on the class list will need to «ask to join» and be approved by the instructor before they can participate, so meetings are not joined by unintended

participants. All assigned co-teachers for the class will automatically co-host the meeting. This moderation tool will allow co-hosts to start a meeting using the same Meet link without the teacher being present [8].

3. *Additional security management tools on various devices*, including mobile. Users of Education versions have access to controls for meeting organizers: control access to meetings, prohibit sending messages to the chat, and prohibit showing the screen to participants. Calendar owners and meeting creators in Google Workspace for Education get additional tools to manage meeting security. Now you can allow and prohibit users from sharing the screen and sending messages in the chat, and manage access to the meeting.

4. *Control over audio and video channels of online meeting participants*. Google Meet meeting hosts can use audio and video blocking to mute other meeting participants' microphones and/or cameras and prevent them from turning them on again until the instructor unlocks them in the main room and breakout rooms. The audio and video blocking feature allow hosts to prevent participants from unmuting themselves after they've been muted [8].

5. *Blocking anonymous users at training meetings*. To improve the privacy of educational meetings in Google Meet, users who are not signed in to a Google Account cannot join meetings hosted by someone with a G Suite for Education or G Suite Enterprise for Education license. This prevents members from sharing the link publicly to encourage anonymous users to request access. Note that this does not prevent users from connecting by phone [13].

6. *The «Video recording» function allows you to record and save the entire course of the lesson and, if necessary, view it*. After the session ends, after some time a link to Google Drive arrives, where the recording is automatically saved. Both the organizer and participants of the video conference have access to the «Video recording» function. Modern researchers advise recording videos that are easy to understand, visually attractive, understandable, and easily accessible to students, as well as recording mp3 and mp4 with the addition of introductory and final musical accompaniment [10].

7.   *Survey during a video meeting.* The moderator of the meeting can conduct a poll among the participants. During the meeting, participants will receive a notification about the survey and can submit a response. At the end of the meeting, the moderator will receive a report of the results of the survey, including the answers and the names of the participants, by e-mail.

8.   *Questions during the video meeting.* Currently, you can only use this feature on the web version of Google Meet to ask and vote on questions without interrupting the speaker's speech or presentation. After the meeting, the moderator will receive a detailed report with all questions.

9.   *Sessions of subgroups.* During video meetings, moderators can group participants into teams to organize discussions in a narrow circle. Sessions of subgroups can be started both directly during the meeting (not only on a computer, but also from a mobile device), and in advance in Google Calendar, adding a timer to them. Participants in a breakout session can ask the organizer for help. The user who scheduled or started the meeting is appointed by its organizer. If you schedule a meeting in someone else's calendar or move it to another person's calendar, the person who owns the calendar can become the organizer.

10.   *Reports on training meeting participants when using Google Meet.* Users of Google Workspace for Education Plus can receive reports on meeting participants in Google Meet, which provides extensive opportunities for monitoring the attendance of online classes.

11.   *«Raise your hand» function.* In Google Meet, participants can ask the moderator to speak by virtually raising their hands. When a participant raises their hand, the moderator receives a message. The participants themselves and the moderator can lower their hands.

Continuing, we note that Google services are dynamically developing and improving to help educators more effectively attract students to control the educational process in distance or mixed learning. New features and extensions are added by the developers and are posted on the support site

(https://support.google.com/meet/answer/9545619?&ref_topic=7306097). We would like to emphasize that the Google Meet service recently received a maximum update.

At the same time, having analyzed the wide range of advantages offered by Google Meet, it is important to draw attention to certain limitations and risks that may arise during its active use:

● *the resource is available only online* – this makes it impossible to conduct a high-quality online lesson within the educational institution with low throughput and poor quality connection to the Internet;

● *the conflict between accounts on the same device during an online meeting*. There is one camera, and there are several technical software tools for video communication. If you have all accounts active, then there is a technical conflict;

● *lack of control over students' work during class*. The organizer of the online meeting can easily pin participants, remove them or turn off their «mic», but each participant can restore it himself. Other participants can only pin the user to their home screen, but cannot mute the microphone and remove them from the conference. For privacy reasons, you cannot turn on other people's microphones. The participant must enable (disable) his microphone himself. In school accounts, only the organizer can mute remote meeting participants. It is not possible to check the behavior and records of students in real-time.

● *impossibility to send educational materials via chat*. You can provide links to Google services (Documents, Tables, Presentations, etc.);

● *the online class recording is possible only in the corporate account* of Google Workspace for Education users;

● *it is impossible to broadcast or record sessions of subgroups*;

● there is *no recording and playback of subtitles together with video meetings*. If you record a video meeting, subtitles are not recorded or displayed when the recording is played back.

Let's also list the personal factors that affect the quality of conducting an online class: the reluctance of conference participants to turn on the camera, psychological obstacles; quick fatigue, because you have to stay in one position for a long time,

there is no possibility to move. Due to this, concentration decreases, and exhaustion is felt. In our opinion, it is necessary to take breaks and reduce the time of the virtual class. Thus, no less human resources are spent in online learning than during classroom classes.

It is also important to emphasize such obstacles that hinder the active use of Google Meet by teachers in the educational process, namely:

● low level of motivation and psychological unpreparedness for its use;

● insufficient level of practical skills in working with the service among teachers and students;

● insufficient methodical support of teachers regarding the introduction of developed methods of using the service in the educational process;

● a high degree of labor costs for teachers for the organization and support of the educational process.

We can state that taking into account the mentioned advantages and disadvantages regarding the use of the Google Meet video conferencing service changes the usual stereotypes regarding the organization of the educational process in real-time, and new methods and forms of education are introduced.

Conclusion. Considering the advantages and disadvantages of the Google Meet service, it is worth noting its necessity in online education. The experience gained in using the Google Meet platform in the organization of online learning in classes is valuable, it allows the teacher to work with students. However, it is necessary to take into account methodological recommendations for conducting classes in the Internet space and online communication. It is important to use various forms of organizing online education, among which the teacher singles out not only the form of a video conference but also such an educational format as a forum, chat, social networks, mobile applications, e-mail, etc. Each teacher chooses the most convenient form for his group, taking into account whether it is an initial or advanced stage of learning, and what competencies are formed in a specific lesson.

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