

Organization of Distance Learning in Google Meet in Modern Conditions

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Abstract

The aim of the article is to analyze the key aspects of distance learning organization on the Google Meet platform through the prism of modern digital educational trends and globalization challenges. The study is based on pedagogical knowledge theoretical methods (analysis and synthesis), dialectical and systematic method, as well as on the SWOT-analysis opportunities. In results it is underscored several key strengths, including user-friendly features, robust security measures backed by Google Corporation, an accessible interface, and valuable functionalities such as the digital whiteboard application that empowers educators to illustrate educational content and live subtitles that enhance inclusivity. However, it is worth noting that Google Meet's compatibility issues with certain devices pose potential challenges in educational settings. Addressing these limitations presents an opportunity to ensure the continued effectiveness of Google Meet as the primary digital conduit for distance learning. The scientific novelty of the study reveals that the platform offers distinct advantages and notable drawbacks, all of which merit careful consideration when planning educational activities. For example, vulnerabilities are the difficulties in launching on certain mobile devices, the limitation of the free version. The conclusions summarize the results of the research and note that the important advantages of the service are the support of the Google Corporation, the accessibility of the interface and the convenience of using digital tools. It is proposed to further develop the integration of the service with the company's products.

Keywords: Google Meet, distance learning, SWOT-analysis, digital learning technologies

1. Introduction

The spread of the COVID-19 pandemic and soon the beginning of the active phase of the Russian-Ukrainian war demonstrated that the use of special online platforms is an important component of the organization of educational space at all levels. As a result of the aforementioned global challenges and threats, the Ukrainian education system has moved to a powerful digitalization of education at all levels, introducing distance and blended learning. According to modern requirements for updating the educational space in the system of training future specialists, it is important to use special educational resources, online platforms, tools using digital and synchronous technologies, webinars.

Typically, the current distance or blended learning uses different platforms: Zoom, Microsoft Teams, and Google Meet. Each of these platforms has their own advantages or disadvantages, opportunities, and threats to use. As in the current literature, there are many synthetic works concerned with the problem of comparative analysis of the use of these or those platforms. For example, Grynyshyna et al. (2023) carried out a detailed corporatist characterization of

the educational integration capabilities of Zoom, Microsoft Teams, and Google Meet platforms. For (2020) conducted a SWOT analysis of these digital educational platforms. A synthetic analysis of digital learning opportunities is presented in Laufer et al. (2021). Parsons et al. (2022) used pedagogical questionnaires to identify key aspects of implementing a distance learning model according to the experiences of the participants in his experiment. Abd-Rabo & Hashaikeh (2021) highlighted the digital transformation of education through an analysis of current educational resources and platforms. At the same time, Martinez-Nuñez et al. (2016) features the performance of virtual learning environments through digital technologies. Consequently, a detailed study of one platform is important. Dewi & Wajdi (2021) characterized the key aspects of distance learning process organization using different online resources and platforms, investigated the main support factors and the barriers for teachers to effectively implement online learning during different global challenges. Important examples include studies by Alfadda & Mahdi (2021); Wedari et al. (2022); Guzacheva (2020), where a fundamental analysis of the digital capabilities of the Zoom platform was conducted. Similarly, Williams et al. (2023) analysed student perceptions of the impact of digitalisation related to the global pandemic on the learning process. For this study, Rajab (2018) is important, as it analyses in detail the key features of the introduction and use of an e-learning model in areas affected by military operations. An analysis of the key aspects of digital learning organisation is provided by Conte et al. (2019). Zhang & Aslan (2021) studied the peculiarities of using modern technologies, in particular artificial intelligence in the educational sphere. At the same time, Riyanti (2021) focused on highlighting the prospects and benefits of Google Meet platforms. The results of the researcher's work are important in determining the further evolution of the platform. Pinheiro & Santos (2022) also touched upon a similar issue, considering the concept of digital education in general. Against the backdrop of their findings, the study by Alfadda & Mahdi (2021) is important, as they identified problems in the functioning of modern educational systems based on their own empirical data. Similar conclusions were also made by Molina Soria et al. (2023), who identified further promising directions for the evolution of digital educational platforms in general.

The scope of a study would encompass a range of key areas and topics relevant to the effective use of Google Meet as a platform for distance education in contemporary settings. The authors of this article focused on the analysis of the Google Meet platform, especially actively used in Europe, however, in Ukrainian educational institutions Zoom or Microsoft Teams are preferred. Therefore, finding out the main features of this platform will contribute to the further integration of the resource in the Ukrainian system of education. Accordingly, the article's aim is to analyze the key aspects of distance learning organization on the Google Meet platform through the prism of modern digital educational trends and globalization challenges.

2. Method

The study is accomplished based on theoretical ways of pedagogical knowledge. As a result of analysis and synthesis use, the problem of organizing distance learning with the help of Google Meet is comprehensively considered. Particularly, based on the analysis, the main subject of the study is divided into such issues as the coverage of the integration of digital technologies in the education system, characterizing the advantages of using the Google Meet platform through the prism of digital education organization, the study of the main drawbacks of the tool based on the practical use of the tool. With the help of synthesis, these parts are associated in order to form holistic conclusions and recommendations for further use of the analysed tool in the distance learning system. Based on the dialectical method, the process of using digital technology in education is highlighted as constantly evolving and changing.

The system analysis was applied in the study of the main functionalities of the Google Meet platform tools, mainly, the screen demonstration, chat work, digital whiteboard, meeting recording, virtual rooms, etc. The system analysis decomposed the system into separate components and analysed how these parts interact and work in order to implement the main goal - to effectively conduct a distance learning session in order to form professional skills, digital competence, soft skills, communicative competence, etc.

At the same time, the SWOT analysis, which was used to compare the Google Meet platform advantages and disadvantages, opportunities, and threats, also occupies the main place in this study. By using SWOT-analysis it was possible to investigate the internal and external factors affecting the performance of the platform. The application of the principles of concretization, generalization contributed to a thorough systematization of the research results.

3. Results

What is distance learning? Webinar researchers define it as a seminar conducted through the use of web technologies (Williams et al., 2023). During webinars, higher education applicants and faculty connect over the Internet using the necessary digital virtual platforms, communicating synchronously or asynchronously using media transfer technologies, webcams, etc. In the educational field, webinars are used as an information and communication learning system. Its aim is to conduct interactive distance learning activities in a digital classroom, opening up additional opportunities for group learning for students. Webinar platforms are specialized virtual programs or applications for the organization of webinars (Nurhakim & Sunhaji, 2022). Due to their purpose and specific software implementations, they may have additional functionality: conducting audio and video recordings, instant messaging using text messaging formats function, collaborative work with software, digital whiteboards, session halls, etc. In the system of e-learning, such platforms occupy a prominent place: they are used for conducting online seminars, online lectures, webinars, conferences, etc., which are an important part of e-learning in general (See Figure 1).

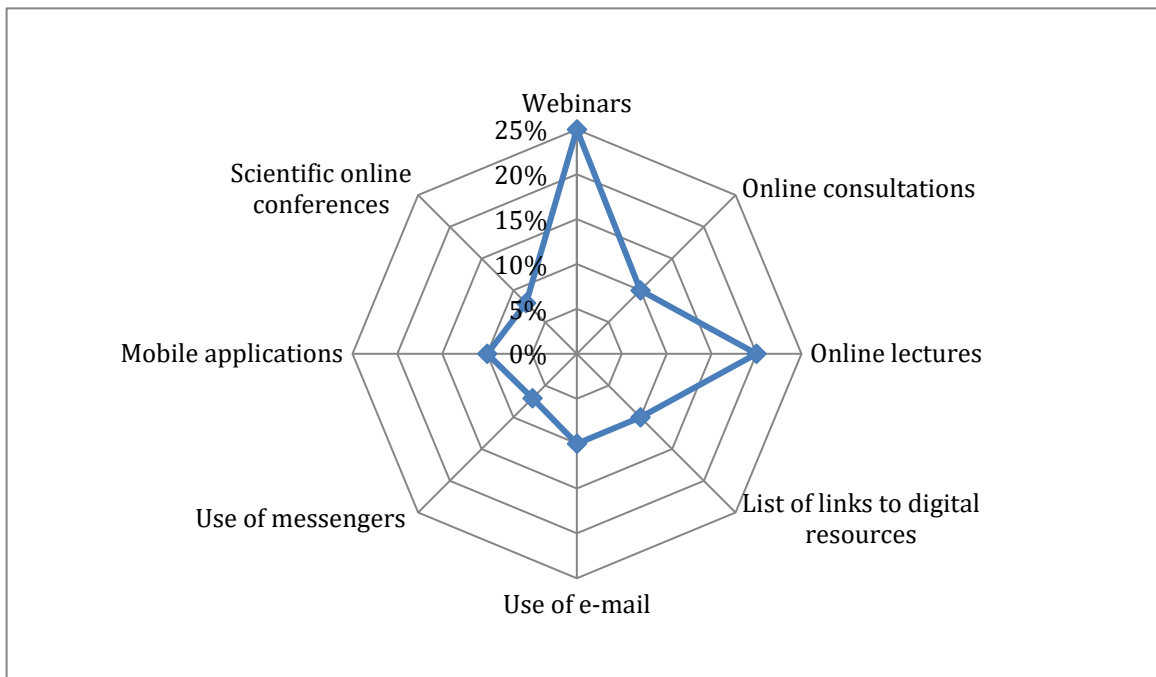


Figure 1. Structure of the Use of Digital Platforms in E-learning

Source: based on Bieliaieva et al. (2023).

Given the current trends in education and based on employers' requirements for the competencies of the “specialist of the future,” it seems appropriate to use information and communication technologies as well as the Internet opportunities in the process of professional training (Abd-Rabo & Hashaikh, 2021; Santoveña-Casal & Fernández Pérez, 2020). However, there are specific requirements for the use of certain digital tools in the learning process. Important conditions are educators' ability to effectively use ICT tools in communicative and organizational tasks while respecting digital safety, digital culture of communication, and legal and ethical standards (Dewi & Wajdi, 2021; Bakhmat et al., 2022). Second, logistical support for learning activities plays a key role. Distance learners must have constant access to the Internet. At the same time, teachers must be familiar with modern digital learning methods and have a high level of digital competence (Almås et al., 2021). Another important condition is the development of an effective information and digital environment for learning activities (Nurhakim & Sunhaji, 2022; Rumble, 2019). The latter should include a system of interconnected information and educational resources, as well as digital educational resources, and a system of modern pedagogical technologies to provide educational services in a modern digital environment. Indeed, the integration of digital technologies and online services in the training system is an important part of the future specialist training (Parsons et al., 2022). Modern digital tools affecting learning are prominent in this process. At the same time, Google Meet is used by almost 18% of all users in the

world. The Zoom platform is preferred (See Figure 2 and Table 1).

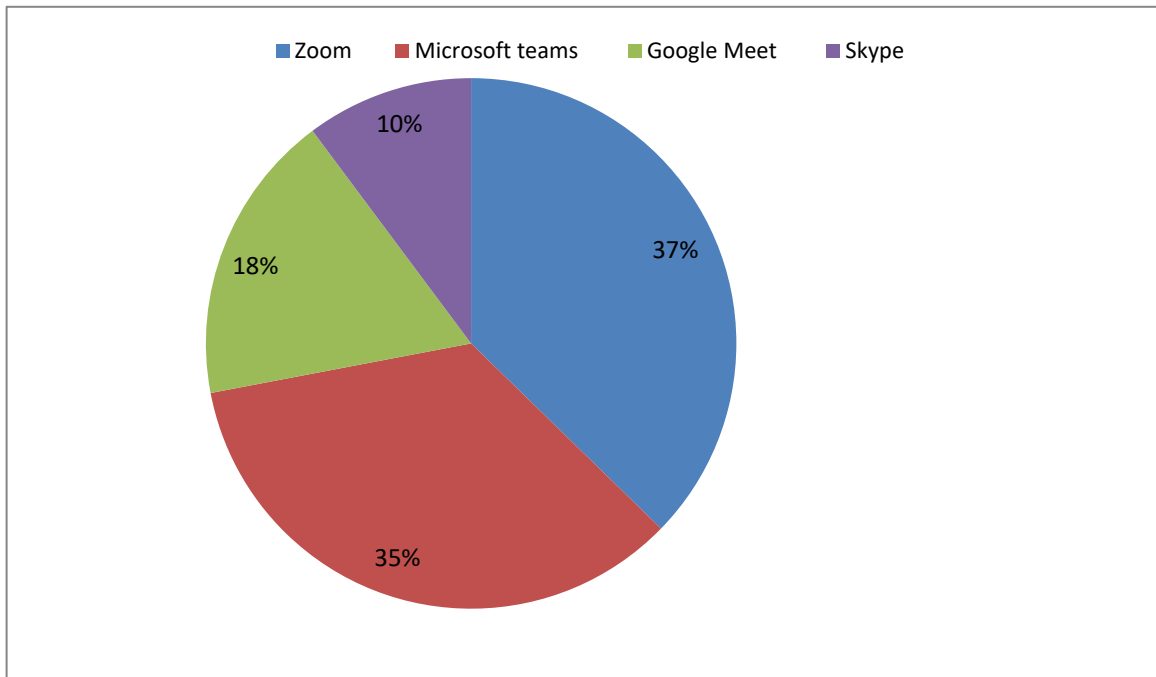


Figure 2. Usage Statistics of Popular Platforms

Source: Digital information world (2021).

Table 1. Cumulative Installs of Leading Video Conferencing Apps Zoom, Microsoft Teams, and Google Meet Worldwide from 1st Quarter 2020 to 2nd Quarter 2021

Period	The number of users (mil)
1st quarter 2020	150
2st quarter 2020	480
3st quarter 2020	320
4st quarter 2020	250
1st quarter 2021	220
2st quarter 2021	200

Source: Zoom, Microsoft teams, and Google meet global app installs 2021. (2021).

Despite this, in many European countries and the United States, the Google Meet platform, which is compatible with various operating systems (Microsoft Windows, Android, iOS), is predominantly popular. To participate in the conference, it is necessary to create a Google account, which can be connected to either directly through the Google Meet app or through the service site (See Table 2).

Researchers in this field consider that Google Meet can be used from any device with Internet access. At the same time, it can be done without downloading an application (like Zoom or Microsoft Teams), which makes it versatile and easy to use (Putra, 2021; Grynyshyna et al., 2023). The Google Meet platform was introduced for use in 2017 by the American company Google. In 2020, due to the spread of the COVID-19 pandemic, the corporation provided free unlimited access to Google Meet, as a result, the number of unique users of this platform increased to 100 million per day (Bergdahl & Nouri, 2020). However, as of 2021, the duration of free video meetings was limited to 60 minutes. At the same time, the tool contains a paid version. In this article, the options for the free version of Google Meet were reviewed.

Table 2. Requirements and the Process of Using the Google Meet Platform

Google Meet	
Requirements	Process
Google account	Google Workspace admin includes Meet for a specific school
Mobile Meet tool, Gmail, or any browser	In order to create a conference, you must be logged into your account
Compatible with operating systems like Microsoft Windows, Android, iOS	Any user can join the conference having the link
Internet access, webcam	

Source: Authors' development

The Google Meet facilitates audio and video calls, conferencing, and provides opportunities to organize collaboration on documents through the use of individual Google disk tools and other resources. The Google Meet enables unlimited meetings (Hidayati & Lina, 2022). An analysis of the benefits and capabilities of the platform will demonstrate the tool's powerful aspects. A key advantage of all digital platforms is organizing communication between instructor and students from any location; Google Meet is great for lectures, seminars, working on different types of controlling speech participation (Rachmania et al., 2022). One considers that Google Meet is also relevant for developing oral skills in both dialogue and monologue formats, organizing student debates and discussions, etc.

A particularly important feature of Google Meet is the aptitude to demonstrate the screen. This option is easy to set up with the "start showing" button on the work panel. The screen-sharing option facilitates the use of a variety of visuals (presentations, images, videos, individual documents, browser tabs, etc.) during lectures or seminars and to accomplish one of the most important educational principles –the visibility (Hidayati & Lina, 2022).

What makes the platform unique is that it contains an online live captioning function (in cases where the lecturer wishes to turn off the sound). You can turn on subtitles and select a language by joining a meeting and clicking the "more" button in the lower right corner, then the setup and "subtitles" section. These features are not basic and are similar in mechanism to voice input in Google Translator. If a student hears a new term or does not understand the speaker, he does not need to formulate additional questions, because the answer can be found in the subtitles. This feature has a significant impact on the learning optimization.

At the same time, the tool contains flexible and simple screen settings, a separate messenger between conference participants. Moreover, it is possible to share individual training files, materials, Internet links necessary for students' independent learning (Riyanti, 2021). The work with learning materials can be organized as follows: it is necessary using the Google calendar when scheduling a meeting, in the "description" block, attach the files to Google drive or directly with the device, and then give access to the students (Al-Marouf et al., 2020). In the system, you can set up what activities students can do with the document: viewing, commenting, editing, etc. These functions should be tailored to the task at hand.

The Google Meet has a special "Ask for Help" button. Pressing it allows higher education applicants to let a faculty member know that they now need help (initially or technically). This opens up a separate chat room, the notification of which the faculty member sees in the form of a corresponding notification on the dashboard. Participants who need help can also join this digital room (Septantiningtyas et al., 2021). It is worth noting that when logging into the virtual room, moderators only have information about messages that have already appeared since their login, that is, older messages are not available. The function "Ask for help" does not work on mobile digital devices, that is, it is relevant for stationary computer systems.

Of great importance is the Google Meet platform capability in setting timers for subgroup sessions and closing digital rooms according to a predetermined plan (Marian et al., 2023). This has a positive impact because it facilitates the scheduling of learning activities during educational work, allocates specific deadlines for certain work, and frees teachers from the constant need for manual time control (Hidayati & Lina, 2022). A countdown timer before completion appears 30 seconds before completion (See Table 3). This helps build higher education applicants' self-organization skills, applying maximum focus on tasks for timely completion and turn in work.

Table 3. Analysis of Tool Functionality

Functionality	Google Meet
Hand raise function, use of emoji	-
Organizing a special chat room	+
Distribution of files, materials	The organizer has the right to
Remote Control feature	+
Conference recording	Only in the paid version of the tool
Number of attendees	Maximum 100 people, in the paid version - unlimited number of participants
Waiting room	+
Video, Image, Audio distribution	All participants
Calendar integration	+
Availability of interactive whiteboard	+
Support for inclusive education features	+ Availability of subtitles, dandruff to zoom, and zoom

Source: Authors' development

A unique feature of Google Meet is the presence of an interactive whiteboard placed in the “Actions” section (Grynyshyna et al., 2023). Significantly, it can be used to show presentations instead of PowerPoint or as a teamwork tool. In addition, a special feature of the tool is screen reading and dandruff. In particular, conference participants with visual impairments are offered a special shaped screen reader, zoom option, increased quality, and colors (Lobo, 2022; Tsekhmister, 2023). At the same time, users with poor hearing will benefit from voice prompts and subtitles during the session (Nurhakim & Sunhaji, 2022). Given the security and privacy factor, other people's microphones cannot be turned on in Google Meet, and any chat messages are available from the time the student joins the online class (Grynyshyna et al., 2023). In addition, only the conference administrator has the right to mute or remove individuals from the video conference. (See Table 4).

Table 4. Benefits and features of the Google Meet tool

Google Meet	
Benefits	Features
Affordable easy-to-use corporate package	The use of the tool at the state level
Since the application belongs to Google, it is designed for easy integration with other services of this corporation services	The functioning of the tool at the school level
The accessibility of the digital whiteboard is a unique software solution in its own way, convenient for pedagogical use, easy, and quick to set up before class.	The expansion of chat functionality
Relative security through Google security policy	The improvement of audio and video conference recording quality
User-friendly interface for users. Flexible and easy screen settings, a separate messenger between conference participants	
The unique function of live online summaries, which influences the optimization of the learning process. Availability of voice prompts	
Screen reading and dandruff for the visually impaired	

Source: Authors' development

Despite the aforementioned advantages, the Google Meet also has a number of promising development opportunities. First of all, it is important to expand the functionality of the chat. It is about the formation of individual chat. As well, a likely prospect is the improvement of sound quality, as many scientists have noted that Google Meet has low sound quality (Grynshyna et al., 2023). The use of the tool at the state level also seems to be quite promising. For this reason, the European countries experience, where all schools or universities use the same platform, is valuable.

4. Discussion

The work of the Google Meet platform has also recorded some shortcomings and threats that can harm its effective use. A typical problem has been the issue of access for education applicants from institutions other than the instructor organizing the course (Tsekhmister, 2022). The system may not allow students with other domains to pass (Nurhakim & Sunhaji, 2022). Just as relevant is the challenge of a slow Internet. The Google Meet system is quite sensitive to the speed of data transmission and in 3G or 4G mobile devices can give errors. This difficulty is not an egregious obstacle, then creates some discomfort for users (De Leon Carriconde & Sayuri Kawamoto Kanashiro, 2022; Reid, 2020).

There is a similar problem with devices that have multiple SIM card support. When such an error occurs, there is no technical solution - it is necessary to remove one of the SIM cards. This solution is not known to all users of the platform and can lead to misunderstandings. Although the service runs on reliable servers, it is not immune to errors - sometimes it does not start properly or does not allow other users of the program to connect (Grynshyna et al., 2023). For this reason, there is a need to define in more detail the threats and disadvantages of using Google Meet in a pedagogical environment (See Table 5).

Table 5. Threats and Disadvantages of the Tool

Google Meet	
Threats	Disadvantages
Google Meet may not work properly on some mobile devices. This happens most often on Huawei devices.	The program has a valid time limit - a free use session lasts up to 1 hour.
Despite high-security standards, there are individual exceptions that can be harmful. For example, access to the digital whiteboard is provided to all participants of the class in a direct link. For this reason, it is impossible to monitor its rational and secure use.	There is a limit on the total number of simultaneous participants in an online meeting of 100 people. If you use the free version of the platform, it is impossible to expand this number.
Probability of hacker attacks	Problems with audio, as the instructor's microphone turned on can create a robot voice when students have audio turned on.
Lack of functionality to automatically track student presence	The recording is not available in virtual rooms. Google Meet does not involve individual chat

Source: Authors' development

So, an analysis of the shortcomings and threats of the Google Meet platform has demonstrated certain vulnerabilities. Although the system is generally easy to use and has user-friendly interfaces for the learning process, there is potential for improvement in its functionality (Arifin et al., 2021; Riyanti, 2021). A perceived weakness is the limitation of the duration of online classes and the setting of a limit of 100 education applicants. This limitation is due to the corporate nature of Google Meet, which is closely integrated with other services of the company (Septantiningtyas et al., 2021). For this reason, it is impossible to organize large conferences based on this platform. At the same time, these restrictions apply only to users of the free version of the program, while with a paid subscription these restrictions are cancelled.

The organization of distance learning in Google Meet, while providing numerous benefits, also comes with its fair share of psychological challenges and problems. These issues can affect the quality of the educational experience for both educators and students. Here are some common problems associated with the organization of distance learning in Google Meet. For example, students may struggle to stay engaged during online classes, leading to reduced

participation and learning outcomes. Some students may be hesitant to participate in discussions or ask questions in a virtual setting, impacting class dynamics. Ensuring that course materials are easily accessible and that students can interact with them effectively online can be a significant hurdle. Fostering meaningful interactions and discussions in an online environment may require innovative strategies. These problems will be despite further discussion.

Experts point out that working on the Internet, in general, should be careful. It is especially related to the hybrid threats of our time and cybercrime (Grynshyna et al., 2023). Working with personal data always has certain risks, even given Google's security policies. To minimize the potential digital footprint, researchers advise sharing less personal information with apps (Septantiningtyas et al., 2021; Andersone, 2020). If possible, work in guest mode. To do so, it is important to set up your account properly and ensure its privacy and security. Particularly, it is also said to create a separate e-mail account that should be separate from other accounts with access to social media or bank cards. However, even in such cases, it is advised to choose access passwords carefully and, if possible, turn off the microphone and camera when recording. Despite the encryption of communication carried out by Google Meet, risk reduction is also associated with such steps. Despite this, the aforementioned platform has the proper set of features to compensate for the risks when using it.

5. Conclusions

The online service Google Meet is a popular platform for distance learning. As a result of the study, it was found that the platform has both individual advantages and some disadvantages, which should be taken into account when organizing the learning process. As a result of the analysis, it was found that the main advantages are convenient packages to use, security guaranteed by Google corporation, accessible interface for use, certain mechanisms (for example, digital whiteboard application, which gives certain advantages to the teacher to demonstrate educational content, the function of live subtitles, additional opportunities for inclusive students. At the same time, the dangers of using the platform for educational purposes it that Google Meet may not work adequately on certain devices. Addressing these disadvantages opens up the prospect of continued use of Google Meet as the primary digital channel for distance learning. At the same time, the problems of integrating Google Meet with other digital platforms to improve learning efficiency may become a prospect for further development.

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