# Usage of E-platforms Google Meet, Microsoft Teams and Zoom in Education

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**Abstract:** The crisis caused by COVID-19 has forced educational institutions to use electronics for educational purposes and thus to digitize the entire process of lectures as well as exams and other school activities. Distance learning is, of course, welcome at a time when it is necessary to limit oneself socially as much as possible to help curb the spread of infections. But everything has both good and bad sides and e-learning is no exception. Rapid changes in this area required even faster adaptation by teachers, professors, or lecturers, as well as pupils and students. The latter, already born in the age of electronics and accustomed to drastic innovations in this field, probably had fewer problems with this. The purpose of the research is to identify the advantages and disadvantages of e-learning observed by users. The research will be limited to three of the most widespread e-meeting programs. These are Google Meet, Microsoft Teams and Zoom. Assuming that these are the three most used programs, the satisfaction of the users of these programs is also an important issue in the research.

## 1.   INTRODUCTION

With the development of technology, online education has become increasingly popular around the world since 2013 (although it is still not the most popular method), and the COVID-19 crisis has further accelerated the digitization and use of electronics in education. Despite the ever-faster unfolding and more frequent use of electronic tools for learning purposes, in most cases, they were only an additional element, a diversification of the classical form of education. However, the current global situation has forced educational institutions to use exclusively e-learning. Teaching methods and student habits have completely changed. E-learning is not just about moving the physical classroom to the virtual. There is much more. It is about adapting the traditional system to new technologies, opportunities, values, needs and, last but not least, events in the field of economy. For effective e-learning, we must therefore adapt the entire model, not just the equipment or space. E-learning plays an important role in the development of future educational models, and systems. Which, in fact, is somehow sensible or necessary in the age of digitalization. All over the world, we are robotizing production, digitizing homes, and gadgets, and increasingly developing advanced smart devices, so it is high time we took a step forward in the field of education as well. E-learning also offers the possibility of abandoning methods based primarily on memorization and mechanical training. The new form of learning emphasizes the importance of encouraging students to actively participate and research, to independently search for and process information, to analyze and solve problems, and to communicate and cooperate effectively. It encourages students to think more actively, participate more actively and be more independent. The development of students is at the forefront and not so much the subject itself. As e-learning takes advantage of modern technologies, it consequently eliminates time and space constraints. One of the advantages of this is the possibility of choosing the learning environment of each individual

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according to his knowledge, abilities and preferences, teachers can improve their methods and diversify their lectures, and schools have the opportunity to avoid geographical boundaries. Based on the experience gained so far, schools around the world are increasingly flirting with the idea of introducing an online form of learning in combination with the traditional way, even at a time when the situation in economies will stabilize.
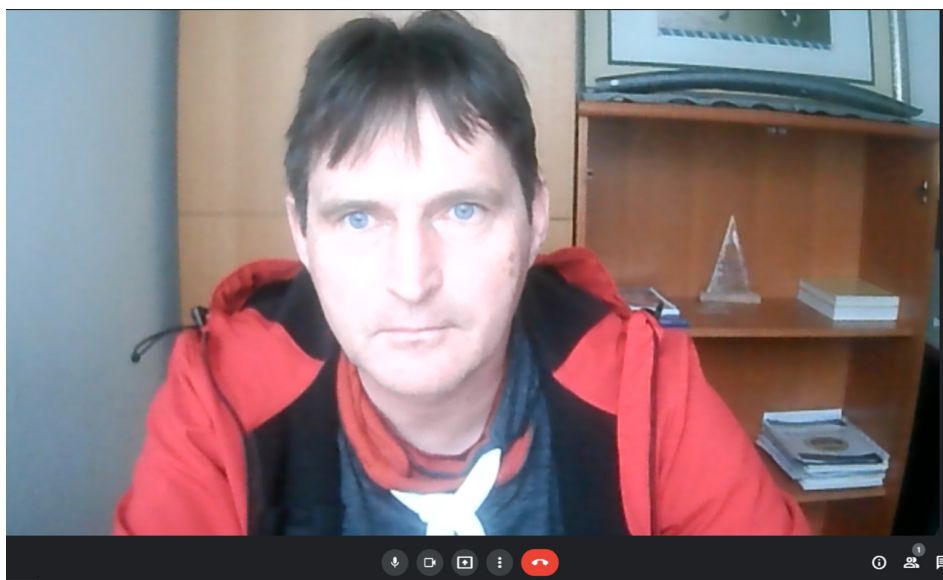
## 2. E-PLATFORMS

Online learning or just networking itself is made possible by various platforms. The three most common ones will be presented below.

### 2.1. Google Meet

Google Meet is a platform (Figure 1) that allows users to have free one-hour video conferences with up to 100 participants. It also offers the possibility of advanced features for organizations, such as the possibility of up to 250 participants (https://apps.google.com/meet/how-it-works/).

Signing up for Google Meets is fairly simple, as you only need to sign in with a (pre-existing) Google Account or a Google Workspace account for business use. When using a computer, no additional installation of the program is required, and for use over the phone, we install the application. We join the video conference using a link or code sent by the host. With the paid version, there is also the option to call the meeting number in combination with the assigned PIN code. If we use the free version of Google Meet, we must log in to the account to participate, but the paid version does not require this. A special feature of Google Meets is the subtitles (in English only) provided by speech recognition technology (https://nerdschalk.com/7-google-meet-chrome-extensions-you-can-try-now/).



**Figure 1.** Google meet platform
**Source:** Own

Before attending the video conference, Google Meets allows us to view our cameras as other participants will see us. We can turn the camera and sound on and off. Google Meet automatically changes the layout of your video meeting to show the content and attendees that are most active. We also have

the option to change the layout. Anyone can easily pin and remove participants and mute them. Either way, you cannot turn on the other person's sound again. Educational editions were created especially for educational purposes. Here, only the user who created the meeting - the teacher - can remove or mute the participants. All participants are allowed to share a screen (full screen or application window), and send instant messages - which also include file sharing - to participants during calls.

This platform has many extensions to power up online classes. For example, there is Google Meet Grid View. The main thing that this extension allows us is to see all the participants at once, instead of only 16, we are allowed to see without an extension. Furthermore, there is Google Meet Plus, with which we can create breakout rooms and control attendance, it gives us quiz options and a dedicated control panel, etc. Google Meet Enhancement Suite includes the ability to automatically mute the microphone, turn off video when joining a meeting or enable captions, lets users quickly mute and unmute themselves using a keyboard shortcut; and Auto Join (skipping the waiting screen when joining a meeting). Besides that, you can start and leave meetings quickly, mirror videos, remove all participants, or enable dark mode. With Nod – Reactions extension you can "raise your hand" (figuratively). You can also send other reactions like "thumbs up", "hand clap", "laugh", "hmm", and "wow". There is also Meet Attendance which gathers a list of attendees instead of the host. These are just some of the many extension options (https://apps.google.com/meet/how-it-works).

There are three versions available to us. The first, free, allows the meeting to last up to 1 hour, with a maximum of 100 participants. We can create an unlimited number of meetings, and participants can join via a browser. We can send out invitations to external participants, but they must still sign in with a Google account. We are offered options for subtitles in English, screen sharing and customizing the layout. Google Drive provides 15 GB of space per user. In case we need help, online self-help and community forums are available. The next possible version is Google Workspace Essentials. This version is chargeable and costs $ 8 (6.69 €) per active user per month. It allows the duration of the meeting up to 300 hours, and the maximum number of participants is 150. In addition to all other options available to us in the free version, you can join the video call via a US or international phone number and save the recording of the meeting in Google Drive. Google Drive provides 100 GB of space per user (up to 2 TB in total), disks are shared, and we can also use Drive File Stream. In case we need help, we have ongoing online support and community forums. The latest possible version is Google Workspace Enterprise. This version is also payable from 6 (5.02 €) to 18 USD (15.05 €) per active user per month. The meeting can be attended by up to 250 people. In addition to the options listed so far, live streaming in the domain for up to 100,000 viewers and smart noise extraction are also enabled. Google Drive gives you unlimited space, disks are shared, and we can use Drive File Stream (https://apps.google.com/intl/sl/meet/pricing/).

Detailed overview of versions of Google Workspace Enterprise (https://workspace.google.com/pricing.html):

***Business Starter:***
- USD 6 / user/month
- Custom and secure business email
- 100-participant video meetings
- 30 GB cloud storage per user
- Security and management controls
- Standard Support

*Business Standard:*
- USD 12 / user/month
- Custom and secure business email
- 150 participant video meetings + recording
- 2 TB cloud storage per user
- Security and management controls
- Standard Support (paid upgrade to Enhanced Support)

*Business Plus:*
- USD 18 / user/month
- Custom and secure business email + eDiscovery, retention
- 250 participant video meetings + recording, attendance tracking
- 5 TB cloud storage per user
- Enhanced security and management controls, including Vault and advanced end-point management
- Standard Support (paid upgrade to Enhanced Support)

*Enterprise:*
- Contact sales for pricing
- Custom and secure business email + eDiscovery, retention, S/MIME encryption
- 250 participant video meetings + recording, attendance tracking, noise cancellation, in-domain live streaming
- As much storage as you need
- Advanced security, management, and compliance controls, including Vault, DLP, data regions, and enterprise endpoint management
- Enhanced Support (paid upgrade to Premium Support).

## 2.2. Microsoft Teams

Microsoft Teams (Figure 2) is an online platform that enables connectivity not only through video meetings (as is the case with the other two platforms) but also through chat, calls, and the ability to share and edit documents. All of this is possible even when we are not connected in a video call. This allows us to send messages directly to one or more people. We can also tag people when we post a message to get their attention. The text we want to send can be edited. You can save received messages, search for them by senders or keywords, and filter them for display (https://www.microsoft.com/sl-si/microsoft-365/microsoft-teams/instant-messaging).

As already mentioned, one of the functions of the platform is also a video meeting. Anyone with an email address can be invited to join the meeting. You can also include the use of other Office applications in the meeting, share your screen, or even use a digital whiteboard. We can join meetings even when we do not have an Internet connection, by combining a PIN code and a call using a global caller's number (https://www.microsoft.com/sl-si/microsoft-365/microsoft-teams/video-conferencing).

The application can be installed on Android and IOS devices. Microsoft differentiates its offer according to users. It offers packages for home use, which do not include the Teams application, and packages for companies, which include the application. Thus, Microsoft Teams is included in three of the four payable offerings (https://www.pcmag.com/how-to/use-microsoft-teams-for-free).
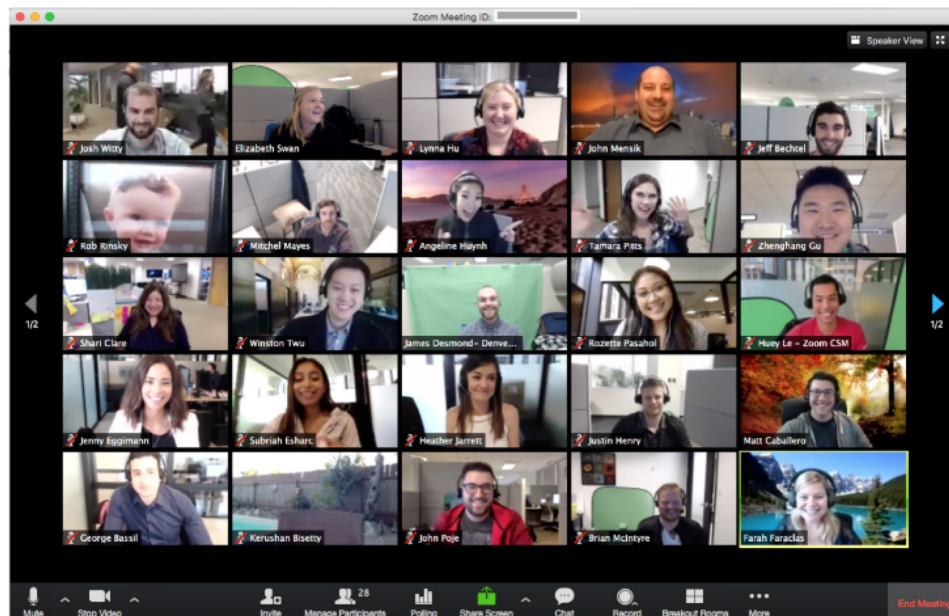
**Figure 2.** Microsoft Teams platform

**Source:** https://www.microsoft.com/sl-si/microsoft-teams/download-app

The offers differ mainly in the number of programs they include, the level of security, the inclusion of desktop applications, etc. However, there are no differences in the offer within the Teams application. Thus, in all three versions, a maximum of 300 people can be included in the video call (https://www.microsoft.com/sl-si/microsoft-365/business/compare-all-microsoft-365-business-products).

## 2.3. Zoom

The third Zoom platform (figure 3) presented was positioned in the Leaders Quadrant (Magic Quadrant for Meeting Solutions-year (2020) by the world's leading information technology research and advisory firm – Gartner (https://zoom.us/gartner-meetings).



**Figure 3.** Zoom platform

**Source:** https://www.monitor.si/novica/zoom-je-postal-svetovna-uspesnica-a-tudi-tarca-zlorab/197273/

Zoom is a video conferencing platform that can be used through a computer desktop or mobile app, and allows users to connect online for video conference meetings, webinars and live chat (https://www.webwise.ie/parents/explainers/explained-what-is-zoom/).

Zoom allows up to 1000 video participants to join a meeting and 49 videos viewed on one screen. Similar to the aforementioned. Zoom also offers various options such as hand raising, sharing screens, files, recording meetings, group or personal chat, etc. With Zoom, you can host online events with up to 100 interactive video participants. and up to 10,000 view-only attendees. Zoom can be used online or as an application for Windows, MacOS, Linux, iOS and Android OS.

Detailed overview of versions of Zoom (https://workspace.google.com/pricing.html):

*Basic Personal Meeting:*
- free (just sign up)
- Host up to 100 participants
- Group meetings for up to 40 minutes
- Unlimited one-on-one Meetings

*Pro:*
- 139,90 EUR / year/license
- Host up to 100 participants
- Group meetings for up to 30 hours
- Social Media Streaming
- 1 GB Cloud Recording (per license)

*Business:*
- 189,90 EUR / year/license
- Host up to 300 participants
- Single Sign-On
- Recording Transcripts
- Managed Domains
- Company Branding
- All features included in Pro and more

*Enterprise:*
- 189,90 EUR / year/license
- Host up to 500 Participants
- Unlimited Cloud Storage
- Dedicated Customer Success Manager
- Recording Transcripts
- All features included in Business and more

*Zoom United Business:*
- 326,00 EUR / year/license

*Phone*
- Includes all the phone features of Zoom United Pro
- Unlimited calling within Global Select
- Optional add-on: add unlimited calling in up to 18 other countries

*Meetings*
- Host meetings with up to 300 participants
- Single Sign-On
- Recording Transcripts
- Managed Domains
- Company Branding.

## 3. ADVANTAGES AND DISADVANTAGES OF E-LEARNING

First of all, it is necessary to point out the fact that without an internet connection, none of the platforms can work. Therefore, we can first highlight the problem of internet connections. People who have poorer internet connections or limited internet access (either due to financial situation or something else) consequently have a poorer experience using the programs. As one of the main disadvantages of e-learning, however, users cite inefficiency compared to real classes. Namely, they report problems with concentration when looking at the screen for a long time. Video meetings require more concentration than live meetings. Our communication consists of verbal and non-verbal speech, and the latter is made more difficult by video meetings. Because our brains are "together", but we are located far apart, special subconscious emotional conflicts occur in our bodies and they also tire our bodies.

One of the advantages is that users have the option of a virtual background, which they perceive as an advantage or as a conformable way to attend class when they do not like their real backgrounds during video meetings. Another advantage is the location, as we can attend classes from the comfort of a home armchair or while visiting a hairdresser, for example. At the same time, we don't have to huddle in overcrowded classrooms and look for empty seats.

## 4. CONCLUSION

Students had to adjust their daily habits due to distance learning. The first change, which is not necessarily a bad one, is definitely that in the morning student just sit in front of the screen and don't have to huddle on the bus, wait in rush hour, scurry around the school hallways, etc. At the same time, e-learning also means a reduction in physical contact with peers, which can lead to a lack of work motivation or even depression. As we found out earlier, e-learning also causes stress due to the lack of physical contact with interlocutors, which in turn makes us even more tired. However, as far as physical health is concerned, frequent enough, long enough and properly performed breaks are crucial. This means not sitting for too long, not looking at the screen for too long, and moving around during breaks, not just turning off the screen and sitting still.

All three programs (Google Meet, Zoom, and Microsoft Teams) are not complex to use and learning the features they offer is fairly easy. In addition to instructions and help on the official websites, you can help yourself with videos on YouTube.

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