

## Comparative analysis of programs for distant teaching

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### Abstract

The spread of COVID-19 coronavirus infection has dramatically affected all the areas of social life and has caused dramatic changes in human interaction, as it forced to change attitudes to remote forms of communication and investigate thoroughly online resources to ensure continuous professional, entertainment and educational activities. The purpose of the given investigation constitutes the description and comparative analysis of programs for distant teaching of foreign language in Ural federal university over a 6-month period of distant education. As the result, there were grouped features of online programs that have been used to provide the continuous educational process as the main practical resource in the real educational process. During the period of distant teaching these programs were compared and their strong and weak sides have been highlighted for future choice of the better option. Also, the description and analysis comprise the details of some technical features for organisation of a comfortable and pleasant learning atmosphere. Over the research teachers and students have thoroughly monitored operating options of Zoom and Microsoft Teams. The distant teaching process should be accessible, convenient and variable for all participants of the educational process that is why the results of such comparative analysis are essential for teachers.

**Keywords:** distant teaching, foreign language teaching, Microsoft Teams, remote teaching tools, Zoom

### 1. Introduction

The total spread of the COVID-19 coronavirus infection has had a critical impact on the areas of human life and has made fundamental changes in all aspects of human interaction, causing transformations in attitudes to remote forms of communication. As a result, it has become necessary to undertake a more detailed exploration of e-resources to provide learners with continuous professional, entertainment and educational activities. The result was not only the use of computer programs for organizing synchronous sessions and applications for ensuring the teaching process, but also a complete curriculum revision considering possible repetition of similar situations connected with the restriction of physical contacts. In the light of pandemic realities, the heads of educational programs and tutors of the Ural Federal University (UrFU) have faced the task to transform 30% of the educational material into a remote format (transform 30% of the educational material into a remote format). The objective of this transformation was a possible switch to full or partial distance learning of

University students to minimize personal contacts during full-time education using distance education technologies (DET). The purpose of the given work is to review and analyze the programs used for organizing synchronous classes in UrFU during the period of self-isolation from March to October 2020.

## 2. Distant teaching via Zoom

The critical situation due to the restriction on movement and mass gatherings or events has caused the search for programs to support the studying process remotely. As a result, one of the most suitable online resources was chosen Zoom service, which is supposed to be a leader in the field of conference solutions according to Gartner Magic Quadrant reports in 2019 [Gartner's Magic Quadrant report, 2019]. Zoom service allows organizing online conferences, meetings, and creating group chats. It is necessary to describe the functions of Zoom service in order to explain why this program was chosen for conducting synchronous online classes in UrFU at the beginning of the isolation period [Zoom video conferencing services, 2020].

First of all, it is necessary to pay attention to the simplicity and intuitive interface of this program with a minimum number of steps to complete any task. Overall, the preparation process of installation and registration takes several minutes, it is greatly facilitated by a valid google account, which allows synchronisation of necessary data. Also, there is equally fast installation of the application on computers and mobile phones.

The organizer starts the working process with the application launching a conference, which can be done in two ways:

- launch the app – start a new conference. This option is suitable to contact in real-time without prior arrangement.
- launch the app – choose from scheduled conferences. This option is used for regular events when all participants retain the link for necessary meetings and use the same conference ID and access code. It can be assigned an appropriate name to such conferences and exact meeting time, which will be shown in the conference invitation (Fig.1).

*Figure 1: Conference invitation*

Ольга Вячеславовна Чернова приглашает вас на запланированную конференцию: Zoom.

Тема: II этап входного тестирования по иностранному языку

Время: 1 сен 2020 08:30 AM Екатеринбург

Подключиться к конференции Zoom

<https://us04web.zoom.us/j/2797675103?pwd=dy8wakNuVmRDcjFCQnpvSFZhVHVNUT09>

Идентификатор конференции: 279 767 5103

Код доступа: 066254

*Source: (Official link for access to a Zoom presentation)*

There are three ways to invite participants to the conference - send an invitation with the link to the conference as a message via external resources, via contacts in the application

or via email. The practical experience has shown that the most convenient option is the first method as connecting via the link takes a few seconds.

The participants of the conference connect to it by clicking on the link in the invitation, or log in to the conference in the application using the given conference ID and access code.

The working process with the service during a lesson (conference) is also quite simple. Firstly, Zoom functions are described. The resource provides rather comfortable work for tutors and students, as it allows them to see, hear and interact within the conference in the same way as a real lesson:

1. Tutors and students see each other in real-time.
2. Tutors write the necessary information on the board – demonstrating the White Board of messages and at the same time, the joint editing function allows students to respond by writing, adding and editing any information they see. In real-time lesson, this kind of collaboration is quite motivating, but it usually takes quite a significant part of the lesson time.
3. The teacher demonstrates the necessary audio and video materials to all students via the "sharing" function. These materials can be displayed on the screen by selecting the appropriate window, or sent individually to everyone by selecting file sharing source – Dropbox, OneDrive, Google Disk or Box.
4. The service allows conducting individual, pair and group work by combining students in separate session rooms, which the tutor can visit and monitor the task performance.

The above-mentioned features of the program are available free of charge to any user who faced the problem of access to an educational institution due to restriction of movement during the spread of coronavirus infection. One notable limitation of the free version in Zoom is a 40-minute length conference with group participation (more than two in total). However, this restriction does not apply to the individual work of a tutor and one student. It is important to note the smooth operation of the program even when the Internet connection is unstable

### 3. Distant teaching via Microsoft Teams

At the beginning of the post-covid academic year 2020-2021, there was a requirement at URFU to introduce an official software for performing remote teaching. Microsoft Teams was chosen [What is Microsoft Teams for educational institutions?, 2020], [Teaching with Teams, 2020] for this purpose as other products of this company had been being successfully used by UrFU users. The introduction to Microsoft Teams happened during the first week of studying during an interview in a foreign language with 1st-year students completing the second stage of the placement test to determine the level of their language proficiency [Microsoft Teams manual, 2020].

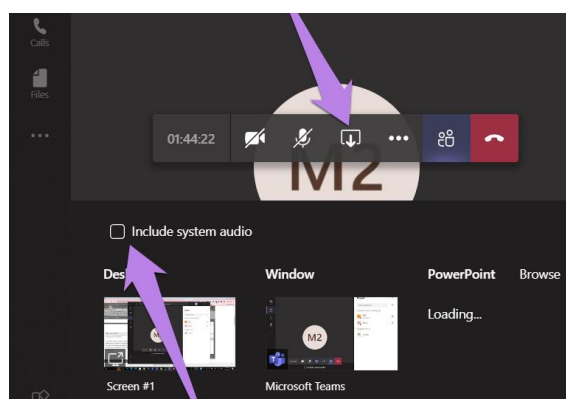
It should be noted, that accomplishing this task proved to be challenging, since the interface and the set of diverse features of Microsoft Teams seemed rather complicated for some tutors. Therefore, both the students and tutors experienced such obstacles as difficulty in connecting to the Microsoft Teams conference when following the link received in advance. The fact is that to invite an external user to a meeting it is required to take a set of additional steps which may be time-consuming and difficult. However, it was convenient to find students within the common UrFU student database by typing their names.

Later, within the educational setting, we gained some experience in working with Microsoft Teams when conducting both face-to-face (F2F) classes and online synchronous classes. The main purpose of using the distance learning program is to conduct distant lessons when students are not able to attend 'live' classes. To organize online synchronous classes via Microsoft Teams for each group a separate 'team' was created. "Teams" is one of the main sections of Microsoft Teams, where the teacher joins students together in teams, creates channels, publishes advertisements and news, shares files and links to sites to ensure collaboration with necessary materials. To make search and work with groups and channels easier the former were named correspondingly to their real schedule, for example, "Monday 1 lesson".

Among the most used and popular features of Microsoft Teams during a conference session in a foreign language class, the following ones should be highlighted:

- screen demonstration function allowing visual navigation over the page of books. This need is due to several reasons: unstable Internet connection for some students or reduced attention of students, as a result of which students may not hear the teacher's instructions about the task being performed. One of the important points when showing the screen is the ability to turn on the sound when playing an audio or video fragment at the same time for all participants in the meeting using the "Share content" and "Include system audio" functions. However, the practice has shown that the Internet connection of some students does not allow them to view the video fragments shown by tutors, as a result, students can only see separate images from the fragment being shared that change every 3-5 seconds.

Figure 2: Sharing a video or audio content by 'include system audio'.



Source: (The Picture of sound function in Microsoft Teams presentation)

- The Breakout rooms function, or session rooms, is used for pair or group work. With the help of this feature tutors can separate the meeting into a bunch of mini meetings to support the classroom. For tutors, this function allows assigning students into separate rooms, visit a particular room, close the room, and return students to the common room. Within the teaching methodology of foreign languages, this function is crucial, as it allows students to practice dialogue skills. What is more, the breakout rooms feature is one of the highest voted feature requests for Microsoft Teams [Creating Breakout Rooms in Teams, 2020], [12]. To use all the functions of rooms, there were organised the breakout rooms A1, A2, etc. During online classes, tutors selected students who would work in the same room and gave them the

number of their shared room, for example, breakout room 3, in which students complete tasks separately from the main group. All rooms created by tutors were visible to students on the left in the General Microsoft Teams window. Tutors, in turn, started video conferences in each of the rooms.

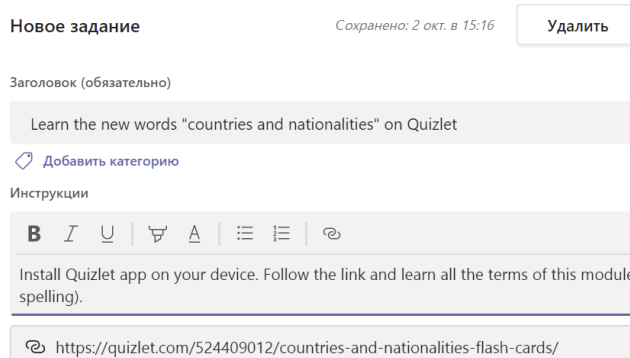
One should mention, the organizer cannot be in all breakout rooms at once. However, they can jump between breakout rooms as necessary. Following from rooms to rooms, tutors were in hold mode in the rooms that they left. It is necessary to note specific features of joining participants to breakout rooms. It is important to mention selecting the option “Standard-Accessible to everyone on the team” when creating a new breakout room (channel) in order to easily change the list of each room’s participants from lesson to lesson. This helps to avoid the situation when participants get used to working with the same groupmates which can be disincentive. The usual instruction made the process of joining within each breakout room faster [Video-course, 2020]. The tutor can have only four different breakout channels, because Microsoft teams only support having four video calls open at once (can only be in four meetings at the same time). The tutor also has their general call open. It is the organizer whose role is to get all participants back into the main room, so they can’t rejoin on their own.

- OneNote Class Notebook is a tool with a huge range of functions which was employed to share class materials such as notes with grammar rules that are left accessible after the lesson is over. Also, we tried to use the ‘collaborative space’ tab while studying specific writing skills in the form of phrases knowing which are of benefit when posting a web comment. As seen the ‘collaborative space’ tab did not prove to be as applicable as we expected for practicing web commenting: first, the students couldn’t comment on each other’s comments and the teacher, on their part, couldn’t leave a comment on students’ comments; second, the visual performance was inappropriate as compared, for example, to vk.com with its potential to imitate a real web-response from students to a posted statement. At the same time, it is argued that it is joint work on different documents is the focus of Teams’ functionality rather than videoconferencing [Video course Transform Learning with Microsoft Teams, 2020].

- Creating assignments feature offers either to design a new assignment or construct a quiz or select an assignment from existing ones. All three options proved to be practically useful. For instance, the creation of a new assignment makes it possible to save time on the explanation of home tasks. Not only detailed instructions can be written in this section but also assessment criteria by selecting ‘Add rubric’. In addition to that it is possible to attach a link to a website such as Quizlet.com for learning words by selecting ‘Add resources’ (Fig. 3).

*Fig. 3. Adding instructions and a link to an internet resource when creating an assignment in Microsoft teams.*





Source: (The Picture of assignment function in Microsoft Teams presentation)

During the formation of a new task, it can be added a criterion for evaluation. For example, it was possible to create a task to ‘write a web comment about the article on the internet in OneNote Class Notebook. A criterion for evaluation was in the usage of phrases 'Agree or disagree' and 'too or also' to give more information and placing them in the correct place in sentences. It was possible to assign the same tasks to different teams by copying a task from team to a team using the function "create a task based on an existing one". This option allows tutors to optimize the time for scheduling classes with several groups of the same level.

The third option is a test - to create a new one, or attach one of the existing tests. It should be noted that Microsoft Teams does not have a built-in module for testing (this function is affordable only in connection with the electronic environment “Microsoft Forms”). The test constructor has limited functionality.

To summarize all the information mentioned above it should be said that Microsoft Teams offers a wide range of opportunities for providing online classes. The function 'Sharing a screen or OneNote Class Notebook' allows tutors to focus students' attention on a particular piece of grammar or exercise, or PowerPoint slide and by grouping the material and organizing a clear sequence of work during the lesson, you will build a clear plan that will be simple and understandable to students [Video course "You Can in :90", 2020].

Next, it is necessary to describe the difficult moments and problems that were detected during online classes via Microsoft Teams:

1. Technical difficulties in connecting to the program itself have become an obstacle to the presence of students at lessons.
2. Unstable Internet connection significantly affected students' work, as images and sound were lost, or students were disconnected from the conference.
3. The technical equipment of students has also become a noticeable obstacle during online lessons. The monitoring of students' work with a turned-off or an absent camera was impossible.
4. As a result, there were distinguished difficulties in monitoring the performance of both current tasks and test activities. Tutors are not able to evaluate real results, since students can use any external resources when completing tasks, namely books, dictionaries, translators, etc. There is no motivation or wish to do the work personally.

5. Difficulties in attention retention through the screen of a device as students tend to turn off the camera during the lesson and can participate in other activities in parallel, and tutors could not have any effect on them.
6. The low motivation of students is the most significant dark side of online studying. Kovalev V.V., Kas'yanov V.V., Manucharyan A.K. report that studying activity through Microsoft Teams has much in common with commercial training courses [What is Microsoft Teams for educational institutions?, 2020]. As a rule, the participants of such online workshops are highly motivated listeners as the knowledge received at the workshop can be easily converted into a source of profit in their professional life. However, the teacher within the in-class setting is not just a source of information but a motivator who encourages listeners to transform information into knowledge. Thus, an unmotivated and indifferent student loses the attention of the teacher and gets the opportunity to imitate their presence at the lesson.

To conclude, Microsoft Teams is staffed with multiple features which do not imply much educational and motivational potential while teaching a foreign language. One of the most complicated skills to master in foreign language studying is speaking which is usually developed through such forms of the communicative approach as role play activities, discussions, etc. Such types of activities are not easy to accomplish even in the classroom and in online mode, this activity looks like a visual presence. The given program may be very effective in terms of ideal technical circumstances for the tutor interacting with the group of highly motivated students.

#### 4. Comparative analysis of Zoom and Microsoft Teams functions

All the difficulties tutors faced during the practice over the period of distant teaching are summarized in table 1.

*Table 1. Comparative analysis of Zoom and Microsoft Teams functions*

<b>Zoom</b>	<b>Microsoft Teams</b>
<b>Internet connection</b>	
Stable connection (both image and audio transmission) even during designated in program connection faults– short breaks in internet connection do not affect the lesson.	Difficulties in organizing technical feasibility of robust communication from participants’ remote locations to ensure a steady video and image presentation of students.
<b>Operating simultaneously with other programs</b>	
Difficulties in simultaneous operating in a browser and application resulted in delayed images.	Rather smooth operating while the application is opened in browser.
<b>Material sharing</b>	
Easy sharing of necessary material.	A bit longer process of presenting and sharing material, e.g. if it is necessary to share audio files. Problems with sharing video content.

Access to lesson materials	
No permanent chat for team participants.	Permanent chat for participants of one group, access to recourses any time.
Price	
Free usage for limited lessons	Not free
Program's interface	
Easy to navigate	Difficult to handle a large number of features

*Source: Self-made based on the conducted research*

## 5. Conclusion

Online programs for conducting synchronous classes allow tutors to systematize knowledge and present material in an interactive form, and when it is necessary, these programs can be used in distant learning. However, they cannot be considered as an ideal training form, as they cannot provide the necessary functionality of real teachers (testing system, knowledge testing) [Khalikova& Khalikov, 2020]. It should be also noted that any program helps to organise classroom time more effectively and ensure flexibility of processes, while the teacher is supposed to be the organizer who manages the effectiveness of these processes. The question of the organizer and technical (multimedia) tools ratio may be controversial for participants of the educational process (students, teachers and university administration) but it is impossible to replace neither tutors, not technological tools. Therefore, the age of information technology makes it quite difficult for teachers to teach and motivate students only with their oral skills and printed exercise-books. At the same time, even the most state-of-the-art technical tools will work effectively only under the control of a professional organizer.

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