Web environment of distance learning

*Anzhelika Gadakchyan*¹, *Nina Kapitonova*^{1,*}, *Natalia Treboukhina*¹, and *Natalia Ustinova*¹

¹Don State Technical University, Gagarin Square, 1, Rostov-on-Don, 344003, Russia

Abstract. This article examines the use of various Internet resources in education in the context of the global COVID-19 coronavirus pandemic. The relevance of the research topic is determined by new requirements and trends in education in the era of distance learning. That is why recently it has become extremely important to introduce new educational technologies in the educational process, in particular in teaching a foreign language. The aim of the article is to identify the advantages and disadvantages of online learning and the impact of information technology on the learning process. The research was carried out using the analytical method and questionnaires. The article also raises the issue of using Internet resources and multimedia tools, which is the main way to provide distance learning using various communication platforms (Zoom, Hangouts, Teams, Skype, Moodle, and others) and social networks (Viber, Skype, WhatsApp, etc.). The result of the research presented in this article is the conclusion that the use of Internet resources and modern teaching aids of the new generation allows teachers to fill professional educational activities with new creative content and form, actively apply problematic, variable, innovative teaching methods, intensively use educational Web -sites, Internet portals.

1 Introduction

In our time, more and more attention is paid to the study of foreign languages, because foreign languages are the key to the development of international relations, holding conferences and cultural exchange between countries. Knowledge of foreign languages and their teaching is one of the priority areas of the country's educational activities.

Today, knowledge of a foreign language is the necessity for every modern person, especially for graduates who are eager to get a job in their specialty and be competitive in the labor market.

During the worldwide COVID-19 coronavirus pandemic and the spread of infection throughout Russia, it is extremely important to provide a high-quality educational process. In this situation, the urgent need of using Internet resources in teaching foreign languages appeared and the opportunity to study a foreign language distantly has become relevant and at the same time student can contact with the teacher directly.

Despite the fact that many teachers are skeptical about this form of education, distance education is increasingly gaining popularity due to its undeniable advantages:

- to use in the work electronic textbooks that are in the public domain; video and audio recording; electronic dictionaries when they translate professionally oriented texts;

* Corresponding author: neonilak@inbox.ru

- to develop and implement on-line tests in order to check knowledge and skills at once;
- the ability to record and reproduce distance classes so that students can re-pass or refresh in memory one or another passed material at any time;
- to make up an author's program for a distance learning course in a foreign language.

Using distant form of teaching, the teacher can communicate with students on such communication platforms as Zoom, Hangouts, Teams, Skype, Moodle and others.

That is why the issue of introducing new educational technologies into the educational process, in particular, in teaching a foreign language, has recently become relevant. In the era of modern technologies, the teacher must improve his pedagogical skills, look for new teaching methods and educational technologies in order to diversify the practical lesson and move away from the traditional lesson model [1].

The strongest argument for the reform of distance education is the rapid potential of students who do not have access to traditional teaching methods or specialized courses, and their desire to acquire knowledge, despite the place of study or financial constraints. The use of technology and multimedia for distance learning of foreign languages has expanded rapidly over the past several decades. In the early days of the Internet, it meant the ability to create online courses by uploading files as class materials and sending emails in an attempt to achieve the kind of face-to-face interaction between teachers and students. However, today the role that technology plays in education is not limited to only on-line courses and the use of e-mails.

The evolution in the role of technology in education is associated with the development from distance learning to online learning. Distance learning was an attempt to address the temporal and spatial constraints of traditional personal learning. Online learning was the result of the full acceptance of technology as part of our lives. The theoretical and practical aspects of distance learning were considered in the studies of foreign and domestic scientists, such as A.N. Tikhonov, E.S. Polat, R.M. Delling, M.J. Moore, M.Yu. Bukharkin, V.G. Kinelev, M.V. Moiseeva, V.I. Ovsyannikov, V.I. Soldatkin, A.V. Khutorsky, S.A. Shchennikov and others.

I.V. Robert defines the term "distance learning" as a process of interactive interaction between a student, a teacher and an interactive source of an information resource, during which knowledge is transferred, skills are formed.

According to A. V. Khutorsky, distance learning is training, during which the participants in the process are at a distance and carry out the educational process by using telecommunications.

In addition, one cannot deny the relevance of this topic in modern conditions, so in this article we will consider the concept of "distance learning" and web-based distance learning environment.

2 Technological platforms of distance learning

Ensuring the implementation of basic educational programs with high efficiency, the implementation of appropriate reforms of distance and innovative education that would meet all modern requirements, is a big important process in the development of education in the Russian Federation. The development of distance learning courses is priority task to ensure equal access to educational opportunities for all students. Educational private organizations and public institutions around the world support the use and development of distance learning, accumulating pedagogical and methodological experience for further development.

In the modern world, the concept of "distance learning" arose due to the needs of society and in a short period of time combined all the advantages of using modern

technologies in the educational process, namely the use of various electronic devices, Internet resources, social networks and multimedia along with traditional methods.

Distance learning technologies provide various opportunities for teaching a foreign language, allow to further expand the range of teaching methods, just as modern innovative equipment such as language laboratories, television and computers have changed our understanding of the standard classroom lesson recently.

Currently, there are various electronic resources, many social networks (Viber, Skype, WhatsApp, etc.) that allow give remote classes. The use of Internet resources and multimedia is the main way to provide distance learning, and content, technology and services are the three key sectors in the field of distance learning. Although, it is obvious that there are two more sectors, the consulting sector and the support sector, which also play a large role in distance learning. Computer assisted language learning programs provide multimedia sounds, videos, graphics and texts that allow students to fully immerse themselves in the study of a foreign language and its culture.

Distance learning continues to interest both teachers and students. Inquiries of students were held on the Linguistics and foreign languages department of DSTU to find out if they are satisfied with distance learning of foreign languages. The results of these inquiries showed that interest and satisfaction of distance learning increased every week. Figures show that students' positive impression grew smoothly from 29% to 72% on the fourth week of studying. The positive moments of on-line learning were called the easy access to all the materials, comfortable atmosphere at home, stressless conditions, time saver and the ability to be on time and assist all the classes. The negative moments were that there were problems with connection, the necessity to spend a lot of time in front of computer, the lack of communication with the teacher and friends and there were a lot of task to study themselves [2].

The design of e-learning courses is usually based on a specific context using webinars, video clips, audio scripts, forums, charts, ICQ, Skype, online testing, interactive tutorials. Distance learning communication tools are divided into two large groups:

- synchronous (chats, ICQ, SKYPE, interactive whiteboards, video conferencing);
- asynchronous (email, blogs, forums, Twitter, video and audio podcasts, online testing).

The asynchronous nature of network communications allows users to engage in a dialogue, forum, or diagram at any convenient time, regardless of time or location. There are numerous advantages and disadvantages of both synchronous (see Table 1.) and asynchronous (see Table 2.) distance learning and data transmission facilities.

Table 1. Advantages and disadvantages of online synchronous communications.

Advantages	disadvantages
<ul style="list-style-type: none">- direct voice contact of the teacher with the students;- instant feedback with the audience.	<ul style="list-style-type: none">- surrounding atmosphere that distracts students' attention;- time for reflection may be limited;- technical failures during the lesson;- the need to install additional software.

Table 2. Advantages and disadvantages of online asynchronous communications.

Advantages	disadvantages
<ul style="list-style-type: none">- the opportunity to consider the task and think about the answer not spontaneously;- the ability to participate in the communication process at any time;- lack of dependence on time, place and planning process;- ease of communication in writing.	<ul style="list-style-type: none">- lack of direct contact with the teacher;- it takes a longer period to make group decisions;- feedback can be delayed for several days or hours.

It is important to consider these advantages and disadvantages of communication facilities, since these systems have various limitations on the educational process. For example, one-way systems using only presentations have been criticized repeatedly because they do not provide anything than a system for distributing video to students. The lack of direct two-way interaction that characterizes many distance education programs contradicts the goals of teaching a foreign language. However, by leveraging this interaction, distance technology can maintain the integrity of foreign language teaching. Learning strategies that encourage student-teacher dialogue and learner autonomy in distance learning situations should be incorporated into teaching.

The Internet helps people to communicate with native speakers through chats, social networks and email. Through the use of the Internet, students can form and improve communication skills, get acquainted with various cultures of other countries. Emails and chats are an important part of communication between students and teachers, as they improve the writing skills of students when learning a foreign language. Students get autonomous use of the Internet, independently choose study materials, exercise self-restraint and cooperation with each other, choose foreign language learning websites that provide a large number of texts for listening to speech, reading texts in a foreign language, etc.

Despite all these advantages, there are some disadvantages that negatively affect the learning process: learners who have low motivation and are unable to work independently may be disorganized.

Taken together, the web environment is a powerful learning environment that forces learners to self-organize and achieve meaningful learning, for example by using blogs to do so.

A blog is a human-added blog post containing text, images, or multimedia files. The blog is one of the modern ways of communication and can be classified in education by the following types:

- blogs created by students to publish their articles, interesting scientific papers, or simply express opinions on a particular issue;
- blogs created by universities or departments in various subjects;
- blogs created by students for their educational process.

Investigating the issue of distance learning, it is necessary to compare it with the traditional form of learning a foreign language.

In the traditional form of learning a foreign language, the teacher is the authority and the active part of the class, and the students play the passive role. Elements of traditional education are:

- competition in the group;
- standard training for everyone;
- specific time and place for training;
- one-way teaching (teacher - student).

But in distance learning, the emphasis is on the accumulation and use of knowledge and on a specially designed educational program that matches the abilities of students.

Nowadays, students require a special approach and highly qualified specialists in the field of modern education, who could increase the level of motivation of the current generation to learn a foreign language and the desire to study. Using digital resources helps students to study at universities, provides new opportunities and allows them to learn to discover new talents.

Foreign language teachers who work with today's students are aware that they think and behave differently than previous generations. They were born in the world of information technology, spend a lot of time on social networks, on various web platforms and the Internet in general, and trust the ideas of the web space more than the postulates in famous

textbooks. The digital generation takes up a significant portion of humanity. These young people require a specific approach and the right technology platform to build knowledge and skills.

Distance learning makes learning much easier for some students. A lot of distance learning programs allow students to work anywhere and in their free time. At the same time, students are given more responsibility, as they must learn to work independently and without the constant guidance and monitoring of the teacher.

For example, a web conferencing type such as a webinar can be classified as both synchronous and asynchronous distance learning. In the case of students participating in listening to a teacher's lecture in real time and asking him through chat, we are dealing with synchronous learning. If the webinar recording was downloaded from the site some time ago, then in this case we are using the asynchronous type of distance learning.

Webinars are very convenient as learners can register for the webinar if they are interested in the webinar topic, or watch the webinar recordings if they are not attending them in real time. Thus, students learn to use their time efficiently and plan it in advance. Video communication is able to give students a chance to have real communication in a foreign language. With video conferencing software such as Viber and Skype, students can download lesson plans, video recordings, and study guides.

In the educational process of a higher educational institution, depending on the goals, it is advisable to use various types of webinars, namely: training webinar, informational webinar, consulting webinar, webinar training, etc. An educational webinar is the provision of new information on a specific topic (similar to a traditional lecture) or a short seminar. The informational webinar is more general in nature and includes more interactive forms of work, informs more than teaches.

Webinar training is one of the ways to check the students' fulfillment of the tasks of seminars or practical classes, it can be implemented over several sessions. A consulting webinar is a form of consulting a teacher for correspondence students or consulting a head on writing diploma (graduation) theses in a distance format. The webinar refers to pedagogical technologies, compatible with many organizational forms and teaching methods, and therefore it has significant didactic opportunities. Their active implementation will make it possible not only to solve the problem of interaction between participants in the educational process in higher education, but also to contribute to the development of new directions, both in pedagogical science and in the system of distance learning.

Of course, distance technologies and innovative tools (including webinars) will quickly integrate into the educational process and change it, actively influencing the content, methods and organizational forms of the traditional educational process. But it should be noted that conducting webinars in the process of implementing curriculum programs will have a significant learning effect only under the conditions of a professionally trained teacher in the field of information technology and his thorough preparation for conducting such a lesson.

Videoconferencing as the means of enhancing communication is widely used in the educational process, providing the exchange and transfer of additional information (presentations, documents, chats with participants, etc.). The technology for the simultaneous transmission of video and voice data is called video conferencing. Video communication for educational purposes usually creates a situation in which any participant has the opportunity not only to formulate and express his own opinion, but also to listen to the opinion of his colleagues, groupmates.

Such a web resource as YouTube, which has great potential and opportunities, is very popular among the current generation of students. YouTube is the largest video hosting service in the world, with 2 billion users worldwide and one of the first places among all sites in terms of traffic. YouTube video hosting allows you to create your own channel,

process and upload video content of any length and broadcast both to a wide audience and in a closed mode (with access by link), while the student can view the material as many times as he wants, at any time and in any place in the presence of the Internet and interact with the teacher and other participants through comments. In addition, the YouTube web resource is actually a "cloud" storage of video files.

These videos are usually of fairly high quality, so it's worth giving links to them or to their fragments. However, sometimes the teacher needs to lay out certain material in an author's way, give detailed explanations or highlight important points that are relevant to a specific group of students. In such cases, you should record your own video and share it via YouTube.

However, the presence of a video clip and the task of revising it is no more informative than the presence of a textbook and the instruction to "read a paragraph" It is important to formulate a clear task: what exactly should the student do during and after watching the video. There are platforms where you can configure a question to interrupt your video and block the transition to the next part without answering the question. You can include text blocks in the video on pauses in order to draw the viewer's attention to certain points in the video. Finally, you can design a survey form to fill out after watching the video activity.

During a regular classroom lesson, teachers often use a basic teaching tool such as a blackboard. An online blackboard analog allows you to provide almost the same functionality, even more.

So, on the board, you can place previously prepared materials (texts, images, video, audio), make notes by typing text or creating drawings. With the whiteboard, you can organize collaboration, in particular with a synchronous online lesson. Students can write on the board at the same time or one at a time. The advantage of the online whiteboard is that all notes can be saved and shared with those who are absent from class. Examples of online whiteboard digital services are <https://jamboard.google.com/> and <https://miro.com/app/>.

In virtual communication, the teacher must, of course, take into account the specifics of linguistic means and resources, the rules of interaction, due to technological features that can not only facilitate dialogue, but also complicate it. Teachers are faced with both methodological and didactic tasks aimed at optimizing the communication process, which is determined by the ability to dialogue with interlocutors, formulate their thoughts, define tasks, avoid ambiguous messages, etc.

Fundamental paper dictionaries are known to be time-worn. On the contrary, electronic dictionaries are characterized by frequent changes and the availability of versions for a wide range of users. Electronic dictionaries and electronic versions of printed dictionaries are currently available on the software market and are a good basis for simplifying the study of a foreign language.

The use of audiovisual teaching aids, they are photographs, videos, audio fragments, is seen as a great advantage of educational electronic dictionaries. The uniqueness of electronic dictionaries lies in the explanation of grammatical phenomena, both in the usual way and with the help of an authentic dialogue, which is not typical for paper dictionaries.

Thus, electronic dictionaries should play an important role in the learning process of university students. The method of using electronic dictionaries, their structure and construction of records will facilitate the translation process and make it more efficient. Modern information technology has a positive impact on the educational process and significantly expands the learning opportunities by providing visual, demonstrative, easy-to-understand presentations.

Students learn better and faster when the teaching methods used match their desired learning styles. With the advent of online education, the relationship between students and

teachers can be radically changed as students become involved in the learning process and become more interested and motivated to learn and improve self-esteem.

The interest of teachers in higher education in new teaching tools allows you to see the educational possibilities of modern equipment and software for teaching a foreign language. The use of modern information technologies can improve students' motivation for learning, their responsibility, the level of self-realization, the formation of communication skills and intercultural competence. It can motivate strong students to help others and strengthen interaction between students. It can also provide a platform for students to discuss topics that are covered in the classroom outside the university.

3 Control in the process of distance learning

The control function is to test knowledge, the formation of competencies in the studied subject that students receive, both in the classroom and outside it. One of the most important functions implemented by the teacher is the control function. For this, distance learning courses are created using various forms, types and methods of control.

Control over the educational and cognitive activity of students in various distance educational courses is aimed at both control by the teacher and self-control of students.

Depending on the stage of the educational process, there are preliminary (diagnostic), current, thematic (periodic) and final control of knowledge, skills and abilities of students.

The effectiveness of studying and mastering a new topic (section or course) in a foreign language lesson depends on the level of mastering concepts, terms, grammatical material that were studied at the previous stages of training. The teacher can obtain information about the level of mastering the previous material thanks to the preliminary control of knowledge. This information is also needed to make a snapshot of the baseline student performance.

Preliminary control in distance learning of a foreign language is carried out with the help of "testing, which allows you to determine the initial level of training of students in order to study the permissible complexity of the proposed educational material. The analysis of the preliminary control data also allows the teacher to make changes to distance learning courses with an emphasis on the student's foreign language knowledge.

The current type of control is necessary for diagnosing the course of the educational process, identifying its dynamics, comparing the results achieved at individual stages of the educational process. Test assignments for current control are composed in such a way as to cover as much of the knowledge, abilities and skills acquired by students as possible. This type of control in distance learning is not so much control itself as getting information about the quality of mastering the educational material with the possibility of making changes to the learning process.

The thematic control is based not only on checking the learned elements, but also on understanding the system that combines these elements. An important role in the framework of thematic control is played by complex tasks that combine the issues of individual concepts of the topic, aimed at identifying information links between them.

The final type of control is carried out during the period of the final assimilation of the material, and also during tests (exams). It is at this stage of the educational process that educational material is systematized and generalized. Control methods allow to determine the progress in the educational activities of students, as well as the pedagogical work of the teacher. Testing knowledge in distance learning is a special process and requires special attention, teacher knowledge and special skills and abilities.

For example, during distance learning of a foreign language in the developed courses, the following basic control methods are used:

- reading, translating text and completing assignments to it;

- listening and performing tasks after listening to the text;
- lexical and grammatical exercises;
- speaking on a specific topic.

The exchange of information between a student and a teacher happens using various modern devices, via Skype and other platforms, or by email. Work with all tasks should be limited in time, therefore, for control, it is necessary to clearly define the time and date of the start and end of the test for proper control.

Tests with automatic verification allow you to organize a quick assessment of the level of mastering of educational material by students. Typically test systems provide the ability to create questions of different types (multiple choice, ordering, matching, etc.). There are often libraries of ready-made questions that you can add to your own testing sessions, changing them if necessary.

Most of the services provide the ability to form questions, sometimes with multiple answers, using images, audio and video fragments. Thus, it is possible to form a whole trajectory of mastering a certain topic. Among the typical settings for online tests, it is worth noting the ability to mix questions and answer options in them, set time limits (time to try, time to open a test for execution), limit the number of attempts, as well as the method or time of reporting test results. If testing is used for educational purposes, then you can weaken the severity of these parameters, but if testing is a control one, then it makes sense to apply more stringent restrictions. It should be noted that the automated check, although it greatly simplifies the routine work of the teacher, is sometimes insufficient for reliable diagnostics of the success of mastering the topic. Therefore, it is advisable to supplement the test tasks with practical work. The teacher can provide feedback on the test results individually or take into account the dynamics of students' responses in planning further lessons.

Online tests can be created in Google Forms as well on specialized platforms, for example <https://www.classtime.com/uk/pic>.

Based on the presented material, it should be noted that the creation of distance learning courses is extremely important for organizing the process of learning a foreign language. In particular, improving the quality of student control when using distance learning a foreign language allows not only to increase the effectiveness of education, but also to inspire students for further self-development.

4 Conclusion

The use of the distance education system in teaching a foreign language is a big breakthrough in teaching students who are unable to attend classrooms for good reasons and gain knowledge in the traditional way.

Thus, the distance learning process is carried out using a combination of synchronous and asynchronous communication means thanks to modern technologies while maintaining flexibility and convenience and expanding the quality and efficiency of both communication methods. At the time of the development of high technologies in the world, the use of distance learning through the Internet, modern information devices, computers in the learning process is growing, and we must synchronize the traditional way of learning with it and increase our abilities in order to be able to improve and expand knowledge. More and more educators and students are becoming familiar with technology, using it and incorporating it into their learning style, and these technologies provide.

Note that the increasing importance of the role of creative interaction between teachers and students in the organization of independent work of students in the process of distance learning with the use of information learning technologies is becoming increasingly important. This type of work teaches responsibility, flexibility of thinking, the ability to

synthesize information, highlight the main thing, set priorities, and strive for high self-realization. The emotional aspect of learning plays a significant role. Positive emotions stimulate educational activity, increase the level of memorization of educational information and contribute to the development of the effect of its reproduction in communication. In the context of such communication, this effect is enhanced by vivid visual images and continuous learning activities, in which all students are involved.

Summing up the above, we note that the use of Internet resources and modern teaching aids of the new generation allows teachers to fill professional educational activities with new creative content and forms, actively apply problematic, varied, innovative teaching methods, and intensively use educational Web sites, Internet portals. The resources of new information tools increase the cognitive interest of students and motivation for further education.

So, distance learning is a holistic process that organically includes the process of teaching, upbringing and personality development and meets modern requirements and which cannot be imagined without purposeful, systematic independent work of students with electronic databases. Distance learning activates the learning process by providing it with creativity. Taking into account the world experience and the growing volumes of dissemination of new information and communication technologies, our science should be aimed at modernizing the content and methods of obtaining education in such a way as to ensure the preparation of the population for life and work in a market, in a post-industrial, information society. The Internet is making qualitative changes in the educational services market, primarily due to the development of distance learning.

References

1. T. Rukosueva, Journal of Siberian Federal University, Humanities & Social Sciences, **9(4)**, 1364-1372 (2011)
2. E. Moshkina, O. Smolyaninova, Journal of Siberian Federal University, Humanities & Social Sciences, **4(6)**, 547-578 (2013)
3. L. Turanova, A. Styugin, Journal of Siberian Federal University, Humanities & Social Sciences, **3(8)**, 468-475 (2015)
4. I. Vainshtein, V. Shershneva, Journal of Siberian Federal University, Humanities & Social Sciences, **9(12)**, 1753-1770 (2019)
5. T. Makarova, D. Makarov, Journal of Siberian Federal University, Humanities & Social Sciences, **11(8)**, 2526-2534 (2015)
6. S. Nowakowski, L. Turanova, Journal of Siberian Federal University, Humanities & Social Sciences, **9(12)**, 1682-1693 (2019)
7. V. Kovalevsky, V. Kirko, E. Malakhova, Y. Vasil'yev, L. Turanova, Journal of Siberian Federal University, Humanities & Social Sciences, **12(7)**, 2034-2041 (2014)
8. H. Uzunboyly, Z. Genc, Issues in Teachers' Professional Development, **19(1)**, 99-107 (2017) DOI 10.15446/profile.v19n_sup1.68624
9. O. Smolyaninova, *EDULEARN18: Proceedings 10th International Conference on Education and New Learning Technologies, July 2nd-4th*, 3862–3867 (2018)
10. O. Smolyaninova, *INTED2019; Proceedings 13th International Technology, Education and Development Conference; March 11th-13th*, 1991–1997 (2019)
11. T. Tregubova, V. Kozlov, A. Kats, Journal of Siberian Federal University, Humanities & Social Sciences, **12(2)**, 261-274 (2019)

12. O. Rogach, T. Ryabova, E. Frolova, Assessment of the innovative potential of Moscow schools: limitations and development resources. *Perspectives of Science and Education*, **46(4)**, 126-137 (2020) doi: 10.32744/pse.2020.4.8
13. V. Perevalov, A. Novgorodtseva, N. Sivkova, A. Korelin, E. Korelina, Digitalization of Russian higher education: educational process technologies (experience of universities of the Ural Federal District of Russian Federation). *Perspectives of Science and Education*, **46(4)**, 36-46 (2020) doi: 10.32744/pse.2020.4.3
14. B. Tarev, L. Turanova, *Journal of Siberian Federal University, Humanities & Social Sciences*, **11(8)**, 468-475 (2015)
15. N. Pak, T. Stepanova, I. Bazhenova, I. Gavrilova, L. Turanova, *Journal of Siberian Federal University, Humanities & Social Sciences*, **6(12)**, 1072-1087 (2019)