

Practice of Transition to Distance Learning Format

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Abstract

Today we have a difficult situation, when there is a necessity to apply different organisation formats of learning process. This period gives us an opportunity to show not only our teaching skills, but the ability of effective management. We need to show how the educational process can not lose its quality, regardless of the conditions in which it takes place. Unfortunately, it takes a lot of time for innovations to be introduced into the educational system. The year 2020 has given us a tough challenge to select and apply highly efficient technology in shortest amount of time without damaging the educational process. It was essential to develop new technologies of distance learning and adapt existing ones to turn the learning process back to normal.

Keywords ¹

distance learning, modern formats for building the educational process, educational space

1. Introduction

Computer technologies are actively used in educational process almost in every corner of the world. Nowadays the teacher is not the only person who is responsible for training. Students receive information mostly from their environment - friends, parents, as well as gadgets. It is hard to imagine the modern world without electronic devices, so educational games play an important role in the educational program for those teachers who want not only to give students new knowledge, but also to captivate them with the subject. Information technologies in education allow to keep the attention of students, as a result, they show a great interest in learning process and the development of the technological skills necessary for academic and professional career.

The educational system should always correspond to the present level of technology, intelligence, programming achievements, therefore, which is very important, the use of information and communication technologies in the educational process should not lag behind. Indeed, the result of the student's activity depends on the realization of the need for knowledge and high-quality means of deepening knowledge, how informative and interesting the process of perceiving the transmitted knowledge is. The latest achievements in the development of information technology include distance education technologies.

Preparations for distance learning, in fact, began in Russia not with the arrival of the coronavirus, but much earlier. For many years, activities have been carried out aimed at training teachers and technical equipment of educational institutions. The desire to develop distance learning fits into the

SLET-2020: International Scientific Conference on Innovative Approaches to the Application of Digital Technologies in Education, November 12-13, 2020, Stavropol, Russia

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CEUR Workshop Proceedings (CEUR-WS.org)

general concept of optimizing education, the closest example of which is the unification of schools, kindergartens, colleges and universities.

Further optimization associated with the desire to reduce the financial burden on the federal budget is not entirely clear, but the real goal of introducing distance education. The sudden outbreak of the coronavirus pandemic gave rise to the acceleration of this process as much as possible. [1]

How the education system will react to the transition to distance learning is now of interest to many stakeholders. Among them, first of all, the students themselves and their parents. The teachers are also watching with interest and some wariness. With the hope of success - our financial authorities, which hope, after the next optimization with the help of distance education, will free up large financial resources. Applying in practice various remote formats, we began to understand how this method is ready for existence in our Russian conditions. Much depends on the success or failure of a true transition to distance learning. First of all, the prospects for distance learning in the near future. And it may come unexpectedly soon - already in September 2020, if the problems with the pandemic cannot be finally resolved. In any case, the ongoing grandiose experiment is an important step towards understanding the further development of our Russian education.

2. Switching to distance learning

The speed with which we are now moving to distance learning is similar to trying to travel in time - you want to, but you can't. Fortunately, we are not the first to encounter this problem and there are already examples of its solution. The most famous of them is China. Immediately after the discovery of the coronavirus, the vast majority of educational institutions in China were quarantined, and all classes were transferred to the Internet. After several months since the beginning of quarantine, schools remained closed, and children continued their education remotely. This is an excellent example of the possibilities of applying modern educational technologies in the emergency of the coronavirus pandemic.

Seeing this experience of our neighboring country, we decided to repeat it and quickly transferred our educational institutions to distance learning regardless of the circumstances. But the first results of this decision do not correspond to the goals and objectives assigned to it. We are unlikely to be able to repeat the successful experience of China in the total transition of educational institutions to distance education in such a short time. And this is due, first of all, to the level of computerization of the Chinese society, where it is almost universal. In China, there are specially designed programs for distance work, created and implemented several years ago, and the physical provision of computers and other gadgets necessary for learning is one of the best in the world [2].

For us, the situation with the coronavirus developed relatively favorably and our country began to prepare for the arrival of the coronavirus in advance, adopting the experience of countries already faced with the pandemic. Much has been done, but one area of life, which should now be paid increased attention - higher education.

We do not want to be serviced by doctors who received a higher education remotely in a few years. Or teachers who do not have practical skills in communicating with children. Everyone is well aware of this, and each university has organized the educational process in its own way. This diversity allows us to be very flexible in using the current situation, relying on the basic position: high quality of higher education and how competitive we are [3].

The Internet has made online learning possible, and many educators and researchers are interested in online learning courses to enhance and improve the student learning outcomes while battling the shortage in resources, facilities and equipment particularly in higher education institution. Online learning has become popular because of its potential for providing more flexible access to content and instruction at any time, from any place. It is imperative that the researchers consider, and examine the efficacy of online learning in educating students.

E-learning concept was not the first term to be used in conceptualizing the use of computerized systems to enable or facilitate the learning process [4]. They identified 23 concepts that belong to the use of computers for learning purposes (e.g., online learning, virtual learning, distance education, m-learning, MOOC, learning management systems). E-learning should not be confused with the concept

blended learning, which is defined as the effective integration, fusion even, of face-to-face and online learning depending on the educational need and purpose [5].

Scientists found four general categories of definitions of e-learning:

1. technology-driven: Use of technology to deliver learning and training programs;
2. delivery-system-oriented: The delivery of a learning, training, or education program by electronic means;
3. communication-oriented: Learning facilitated by the use of digital tools and content that involves some form of interactivity, which may include online interaction between the learner and their teacher or peers;
4. educational-paradigm-oriented: information and communication technologies used to support students to improve their learning [6].

Some define e-learning as an innovative web-based system based on digital technologies and other forms of educational materials whose primary goal is to provide students with a personalized, learner-centered, open, enjoyable, and interactive learning environment supporting and enhancing the learning processes [7].

Garrison claims that e-learning is a disruptive technology that is currently transforming how learning is approached in an educational context [8]. Dron and Anderson identified four generations of e-learning pedagogies: the behaviorist/cognitivist, the social constructivist, the connectivist, and the holistic generation [9]. The relevance of each pedagogical approach depends on the technological capabilities that it uses. The holistic generation includes: Learning analytics, collective technologies, deep learning and artificial intelligence, disaggregated tools and services, mobility and device diversity, the internet of things and ubiquitous computing, virtual and augmented reality, and 3D printing. The characteristics of this next generation of pedagogies are:

1. student-centered;
2. distributed technically, socially, and organizationally;
3. crowd-driven support and emergent;
4. integrated, just-in-time, and authentic;
5. courses will play a less significant role;
6. learning will be separate from accreditation.

Njenga and Fourie identified 10 myths about e-learning in higher education, extracted from the emerging educational practice, information provided by technology providers, and the academic literature:

1. e-learning is a very powerful instrument and all educational institutions should adopt it;
2. e-learning may replace human interaction;
3. e-learning reduces the economic costs of education;
4. increasing the academic offer and large amounts of information are beneficial for learning;
5. digital technologies should be the main learning means or resource in higher education;
6. leisure (including games and entertainment) and learning are separate activities;
7. e-learning will make university institutions more competitive;
8. defining the infrastructure (hardware and software) in e-learning is the most difficult task;
9. e-learning will be the end of traditional campuses;
10. e-learning may decrease absenteeism and the dropout rates among university students [10].

This allowed for identifying the main study themes and research lines that provide scientific knowledge about the present and future of this educational technology.

Researching the world practice of switching to distance learning format, the reaction of the universities is striking:

More than 60 million students found themselves in a situation of complete cancellation of classes. Of course, most universities reacted quickly and transferred to a distance learning format. But more than 85 million of students are still at risk. Everything is not so good in Russia as well, there are no universal solutions, applied in higher education area. The main conclusion: in spite of various activities and practical tools that higher education system uses independently, in general, everyone reacts according to the situation and applies measures that are relevant to solving the difficult situation in the region.

General measures should be implied:
prohibition of academic mobility;

- transferring international events to a later date;
- cancellation of events with more than 25 participants;
- transferring classes to an interactive format;
- limiting the stay of employees over 65;
- recruiting volunteer teams;
- strengthening preventive measures;
- interaction with authorities;

Having analyzed practical cases from different countries of the world, these measures are applied in the largest alma mater, such as Harvard, Hong Kong University.

In our country, decisions are made more centrally than in USA, since there is practically no Ministry of Education there.

It is necessary to develop tools for the successful implementation of a practical case:

To form a headquarters for the implementation of all measures implemented by the university (headed by the vice-rector for digitalization)

To familiarize the entire faculty with the distance learning tools used

Create groups on social networks for each discipline (classes are conducted in the form of a webinar, answering questions), choose the head of the groups

Control by the leadership of the institute, department

Conduct online training for everyone interested

Solve problems with the passage of practices.

The search for a convenient form of implementation of distance learning was jointly undertaken by Russian universities. So, without destroying the educational space, adapting students and teachers, it is possible to establish communication with the help of:

student's personal account on the university portal;

webinars for international students in equipped dormitory rooms;

social networks;

transfer of educational programs to Moodle;

Skype;

live broadcast communication with students and their parents; university hotline;

online courses;

creation of new educational platforms;

From a technical point of view, the process of distance learning using modern telecommunication means is the delivery of large amounts of information from a central point to a multitude of remote local points, while ensuring the possibility of transferring a significantly smaller amount of information from each local point to the center. In this case, information in both directions can be transmitted either simultaneously during an interactive communication session (synchronous learning mode), or the forward and reverse transmission processes can be separated in time (asynchronous mode).

There are a variety of telecommunication technologies and protocols in the distance learning system. It is possible to distinguish both traditional technologies (telephony, radio, television) and new ones that require wider signal bandwidth (access to the Internet, audio and video on demand, video conferencing, remote access to local networks, combining remote segments of local networks, internet networks) [11].

To work with the system, the Adobe Flash Player plug-in is required for the user's browser. To be able to display the screen of the presenter in the system, the Java runtime environment must be installed on his client computer.

3. Adapting to a new format

To master the chosen educational programs by students without losing quality and creating conditions for safe study and work, the following values must be taken into account:

Development of institutions (healthy competition, cooperation, openness of the structure)

Disclosure of learning abilities (digital learning, student engagement, universal competencies)

Generation of global leaders (entrepreneurship, integration of science and education, attracting talented youth)

Promotion of innovations into the economy (joint centers, innovation infrastructure, horizontal links)

Formation of the global agenda (ambition, concentration, diversity).

Having tested many resources, the BigBlueButton resource was most successfully adapted to help NCFU teachers.

BigBlueButton is an open source web conferencing system for online learning, but can also be used for briefings, presentations and webinars. BigBlueButton supports real-time sharing of audio and video, slides, chat, screen, multi-user whiteboard, online polls, breakout rooms, recording sessions and playing them back for later viewing. The system allows working with the following types of users:

Listener - a user who can participate in a chat, send / receive audio and video, respond to polls, and display emoticons;

Moderator - has all the capabilities of a listener, additionally can appoint presenters, upload presentations, enable multi-user screen mode, share the screen, manage the parameters of the presentation area and users

Presenter - user - listener appointed by the Moderator to host the webinar and control the display of the conference screen.

To create a BigBlueButton videoconference element in the course and act as a moderator, you have to log in to the Moodle eLearning portal as a user with the role of teacher.

The user interface is represented by the following windows:

Users;

Webcams;

Chat;

Presentation.

You can change the position and size of individual windows, as well as minimize them to the bottom of the screen or expand to full screen. The default window layout contains the Users window. Users joining the session appear in this window, and icons of the connected acoustic devices are also displayed: headphones, microphone.

The Chat window is intended for exchanging messages between conference participants. Use it to greet participants, ask a question to the speaker, comment on the topic of the meeting, post interesting information concerning all participants. To post messages, use a special field at the bottom of the screen. Information from the Public tab is available to all conference participants. During the conference, the participants of the session in the General Notes window have the opportunity to create a general block of notes on the issues discussed at the conference. To do this, select General Notes in the layout of user windows and add your comments. The window is available for editing by all session participants. To save the entries from the General Notes window after the video conference, you should use the option to save them to a file. BigBlueButton will process the file and display it to all other users in the Presentation window. The presenter controls the way the presentation is displayed to the rest of the participants. When you add notes to slides using the whiteboard toolbar, the slides are updated for all users. At the same time, all participants of the webinar can see all the changes on the interactive whiteboard in real time. For the file loaded in the Presentation window, you can select a slide. You can also use the pointer to highlight important sections on a slide. The pointer will be visible to the participants in the video conference. Session participants can take advantage of the interactive whiteboard. After enabling the multi-user mode button, you can use the interactive tools, and you can also collaborate on the loaded document in the Presentation window. The window shows the actions of the markers of each user participating in the collaboration. You can also use a tool to involve video conference participants in joint activities - this is the ability to conduct an online survey. During the videoconference session, the presenter can go to a pre- created survey slide on the presentation page and ask the participants to take a survey. To do this, he needs to create a survey slide on the presentation page in advance and upload this file. The presenter opens a page with a survey in the presentation and selects the type of answers. The Current Survey Results window displays the survey results in real time with the ability to see how participants are responding and who has not yet responded. If the video recording option was used during the video conference, then after

exiting with the end of the video conference, a file with the session recording will be generated. The recording file will be placed in the course element Videoconference BigBlueButton and will be available to all participants. The moderator has the ability to publish the entry or make it inaccessible to listeners.

All tables must be centered, neat, clean and legible. Do not use pencil or hand-drawn tables. The distance learning format is not only a chance for students to deceive the teacher and pass the examination session without knowing the discipline material, but also a challenge to the teacher himself - how to adapt the final control in the discipline so as to unambiguously check the results of its mastering by students [12].

For the teacher, opportunities open up to rethink the discipline and control measures for it, since the lack of the possibility of direct observation of the student at the time of the assignment requires a more creative approach to the formulation of the assignment itself.

It is also important to explain to students that dishonesty in an exam or credit goes against the values of higher education.

Of course, it is not easy to quickly transfer a discipline to a distance format, especially if practical skills and experience are the result of training in it.

The order of the teacher's actions to transfer the discipline online:

1. analysis;
2. planning;
3. development;
4. assembly;
5. informing;
6. training.

There were many problems with the transition to the remote format. Analyzing Internet resources, first of all, users were dissatisfied with technical failures during remote work. Most often, users complained about the technical unavailability of Internet resources recommended by schools for remote work with a heavy load [13].

General failures by region were recorded even on the platforms of the "Electronic School" or on the most important sites of the "Electronic Diary" level.

In this regard, all participants in the educational process had difficulties with authorization and personal account, sending and checking homework. Previously set ratings periodically disappeared from the servers, users from different regions of the Russian Federation noted.

Complaints have been made regarding the digital skills of educators. According to experts, over 25% of comments were about the digital competencies of teachers. At the same time, the authors of the reports note that employees of educational institutions often lack understanding of online teaching methods and skills for remote transfer of knowledge, and therefore distance learning turns into a system of self-education [14].

Many teachers, according to users, simply post their homework on social networks, for example, independently study the material and outline it. To learn the material for real, students have to take additional lessons at specialized online sites.

At the same time, almost 5.5% of complaints refer to the problem of the increased workload on students and teachers. Parents complain that homework is sent in a large volume, and teachers are forced, in addition to the main activities, which are not always canceled, to prepare very closely for classes on the Internet [15].

No one in modern Russia has ever analyzed whether young people are ready for distance learning. Not everyone has the stable high-speed Internet in their home that they need for virtual classes. And in conditions when parents are forced to work remotely, children sometimes simply do not have enough computers. Large and low- income families are in a special risk zone here.

4. Conclusion

The transition to distance learning influenced not only how we interact with students and what material we give them to master, but also our understanding of what competencies both students and

university staff should have, how and to what extent to use the distance format in the future. And also leaves the place to think that our life after this will never be the same [Tai16]. We agree - online education cannot 100% replace the work of students and teachers in classrooms. Nevertheless, the use of distance technologies in educational activities is very productive. Since it increases the motivation and interest of students in learning, makes it easier for the teacher to formulate individual assignments and check them, requires students to be more independent and result-oriented, to be able to work in an information environment, and, therefore, develops their digital culture, which is useful in the modern world. We are convinced that the best solution in the implementation of educational programs will be a combination of face-to-face studies and distance work, and the teacher will need to decide in what ratio to integrate them in order to achieve maximum results [17].

Until 2020, there was no analysis in modern Russia of whether young people are ready for distance learning. Thus, distance learning, like any other form of knowledge acquisition, has many of its advantages and disadvantages. A significant drawback is the lack of a centralized system of certification and accreditation of e-courses, which results in a lot of "hand-made articles" loudly called e-courses and e-textbooks, but in reality they are text documents. An important factor hindering the more intensive introduction of distance technologies into the educational process is the lack of motivation of university teachers to work in this direction [18]. Perhaps the reason for this is the high labor intensity associated with the creation of teaching materials for distance learning, but here you need to realize that in the future, the time and effort costs should be compensated for by reducing the time spent on performing some of the usual types of teaching load. At this stage of development of distance technologies, the task is to organize the educational process so that new forms of education give, in terms of quality, a result at least the same as traditional ones. In addition, there are many questions related to methods of measuring the effectiveness of distance learning. But be that as it may, a huge "plus" of distance technologies is that they allow any person to learn continuously - all his life. Distance e-learning is a rather complex process that requires not only moral and material costs, but also the appropriate training of the teacher. The success of the introduction of electronic DL into the system of modern higher education is determined by the rather high motivation of the teaching staff and students. It is safe to say that today students are more ready to use e-learning than teachers, because the present modern generation has a fairly well developed skills and abilities of working in social networks and with computer technologies [19]. The involvement of university teachers in e-distance learning is possible provided that a well-thought-out motivation system is developed. Since the development of electronic educational complexes and subsequent work in it requires a lot of time and effort, it is necessary to resolve the issue of reducing the overall teaching load of the teacher. The solution of these issues on the part of the university management can lead to the successful introduction of distance e-learning into the educational process and the satisfaction of the needs of modern society and the labor market for workers capable of self-education throughout their lives.

5. Acknowledgements

Identification of funding sources and other support, and thanks to individuals and groups that assisted in the research and the preparation of the work should be included in an acknowledgment section, which is placed just before the reference section in your document.

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