Distance learning of students in the modern world

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Abstract. The article examines the problem of organizing distance learning in the conditions of uncertainty and the forced transition of teachers and students to online interaction. The situation that has arisen is viewed as a natural experiment the education system finds itself in requiring an understanding of its results at a certain stage. A theoretical analysis of the most popular distance learning organization technology implemented in Russian universities under current conditions (the coronavirus pandemic) is conducted and a critical evaluation of the obtained initial results of the readiness of higher education system to transition into the new digital education reality is provided. The discovered problems of distance learning include: the insufficient level of teachers' digital tolerance and the lack of necessary competencies in them; the psycho-emotional instability of the online interaction participants; low learning motivation and the level of students' practical skills; the lack of a universal digital platform for the organization of activity of all participants of the learning process. The perspectives for solving the aforementioned problems and priority directions in the improvement of this form of education are established, specifically: the technological direction (the formation of teachers' ability to create online courses and effectively combine the functions of different digital platforms); the methodical direction (the formation of a set of professional and personal qualities necessary to effectively address professional tasks and expansion of the set of methods and means of organizing students' activity considering the conditions of online interaction); the psychological dimension (teachers' awareness of the need for self-improvement in the sphere of digital technologies and the formation of interest in learning and satisfaction with the process and results of distance learning in students). The identified areas are considered as risks the consideration of which in educational activities will make the distance learning process flexible and manageable.
Keywords: digital didactics, conditions of uncertainty, readiness, distance learning technologies.

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1 Introduction

Preserving its main principles but transforming them following the development of science and society, traditional didactics is being gradually replaced by digital didactics. This transition is determined by:
- the development of digital technologies forming the modern educational environment;
- the specifics of the modern generation of students;
- the demands of the post-industrial society for the personal and professional competencies of its citizens;
- the increased number of risks of unforeseen situations calling for emergency decision-making.

Digital didactics involves a complete transformation of the elements of the educational process [1-12], one of the forms of education in it being distance learning realized through the specific means of internet technologies. This form of learning has become a part of the educational practice due to the coronavirus pandemic [13-21].

The situation that has arisen can be viewed as a natural experiment the education system finds itself in and we are attempting to comprehend the accumulated experience of organizing distance learning of students in this period.

Theoretical analysis of scientific works examining the identified problem and evaluating the initial results of the total transition to distance learning [16-24] allows determining the problem field of the study aiming to identify the risks, opportunities, and priority areas for improving distance learning.

A critical evaluation of the experience of organizing distance learning makes it possible to structure this process, neutralize the negative aspects, and, as a result, enhance the quality of education and the level of satisfaction of all educational process subjects with its results.

The study objectives include:
- evaluating the opportunities of distance learning in replacing traditional learning;
- determining the risks presented by the established practice of distance learning.

2 Methods

Analysis of scientific literature presenting the methodology and technology of organizing remote work of universities including the conditions of a pandemic; the first results of studies of the readiness of the education system and its subjects for the transition to distance learning; analysis and generalization of the experience of distance learning at a university in the conditions of unforeseen circumstances and the results of surveys of students and teachers.

3 Results and discussion

Analysis of the problem of distance learning and the specifics of its organization [1, 3-10, 16, 18-21, 25-30] allows us to conclude on the lack of a uniform view of its content and structure. As a result of the study of the theory and practice of distance learning [10, 11, 15-21, 25-27, 31] the following directions calling for attention are identified:
1. The formation of higher education teachers' readiness for distance learning

a. "digital tolerance" [31] – manifests in a teacher's positive perception of the specifics of Generation Z; in the acceptance of digital technologies as an inherent reality of the modern world; in improving one's digital skills as a need one has come to be aware of. Reliance on the Digital Blooms [3, 4] allows one to operate digital instruments the choice

of which directly depends on the complexity of the tasks being solved and the competencies being formed.

Successful activity in the conditions of the transition to digital didactics requires a teacher to possess the following personal and professional qualities [10, 11, 19, 27, 29, 31]:
- the ability to be available 24 hours per day,
- concentration on the student's educational needs, tutoring their individual trajectory of learning and development,
- acceptance of the need for self-development in digital literacy,
- the ability to integrate pedagogical and digital competencies,
- the ability to promptly solve professional problems at a high level of complexity,
- ability to critically comprehend information and carry out analysis based on relevant data [31-32].

   b. technological literacy: ability to create online courses; work using different educational platforms.

A study among university professors with a scientific degree showed a low level of proficiency in distance technologies (3.2 points out of 5). Every fourth respondent had never used remote video communication services in the past three years [23].

The experience in using educational content to organize online classes with students was lacking in 65% of teachers. By the end of the first month of the forced transition to distance learning, 95% of teachers were already quite successful in using Microsoft Teams and Zoom applications in their professional activity [20].

However, this success is quite conditional since in most cases, teachers' work was formalized and depended on their technological literacy. The use of presentations accompanied by teachers' commentary became the most common form of teaching. Teachers did not possess the competencies of creating the pedagogical design of an online course, its methodological justification, and filling its educational content.

The evaluation of teachers' activity in the context of the SAMR model [6, 33] demonstrated that among the identified levels, "substitution" and "accumulation" were the ones used most commonly while the "modification" and "transformation" levels were either not used or used partially.

2. Organization of high-quality interaction of the educational process participants based on the opportunities of digital platforms

A specific feature of distance work has come to be the use of various platforms [13, 15, 17, 20-22] mastered in different periods.

The experience of working with the Moodle platform allowed teachers to upload the necessary working materials, organize an interactive area, and check the results of students' independent work.

Familiarization with the Teams platform took place on a tight schedule and its functions, such as conducting video conferences, giving lectures and showing presentations online, organizing group work, using a whiteboard, demonstrating video content, testing, communicating, etc., were discovered gradually.

The Zoom platform also performed well in the organization of work with students. However, it was used by teachers to organize short-term meetings with students on their own initiative.

The opportunity to conduct full-fledged webinars, join in collaborative work, and discuss problems of a large number of listeners was provided by the Webinar.ru platform.

Combining the opportunities of different platforms in distance work showed itself the most effective. Such integration was a necessity due to the different levels of user readiness to work with all available functions and tools. It is important that in such situations, the processes of the human psyche activate, and the rate of learning and its qualitative content increase.

The experience of using various platforms led us to conclude on the need to develop a universal platform that would meet the needs and demands of all participants of the educational process (the technological aspect).

Moreover, in organizing the educational activity, it is crucial to consider the key ideas of modern pedagogical approaches and practices (Connectivism, Design Thinking, and Peeragogy) [7-9, 12, 28-30, 34] focused on effective mutual learning through digital mediums and online learning environments and developing collaboration and creativity where a person's personality is at the center of every process (the methodological aspect).

3. The formation of emotional stability in students and teachers under the conditions of distance learning

The proportion of students' independent work has increased, which has made the lives of both students and teachers more difficult. The auditory and visual analyzers are stimulated for at least 6 hours a day which leads to chronic fatigue and feelings of insecurity and emotional instability in the educational process participants [35, 36].

As a result of distance learning, 87% of teachers expressed an opinion that it is better to conduct lessons in person and 67% of teachers perceived the possible need to work remotely in the 2020-2021 academic year negatively [23].

"Most students demonstrate medium to low subjective well-being and medium to low integral characteristics of satisfaction with distance work" [35]. This finding is determined by the socio-psychological factors characterizing subjective well-being: interest in distance learning, satisfaction with the conditions of distance work, relationships with classmates, interaction with teachers, valuing high marks over the performed work, satisfaction with working conditions, and the level of teachers' professional responsibility [35, 37].

On the one hand, the opportunities of distance learning allow for quick feedback. On the other hand, students are reluctant to be active; it is impossible to understand how the audience perceives the teacher and the presented educational information and which participants are involved in the activity and which ones joined the group formally. This leads to difficulties in organizing discussions.

The monotonous background, the rather meager methods of distance learning, and its lack of emotionality cause rejection among extroverts, people with intuitive thinking, creative and active individuals. The subject-activity component disappears from the learning process. The "club" nature of training is being lost [21].

According to the study conducted at the University of Pennsylvania (2013), only 2 to 14% (depending on the type and complexity of the programs) of all users registered on Coursera completed more than half of the course or the entire course [2]. This fact indicates how difficult it is for students to maintain high educational motivation themselves when left without external stimulation [37].

Teachers note that highly motivated students showed the greatest degree of activity in the online learning environment. An undoubted advantage was the increase in the attendance of online classes associated with the opportunity to join the educational process in a distance format from any device that has access to the Internet from anywhere.

4 Conclusion

Traditional education no longer fully meets the realities and challenges of the modern world. Digital technologies are viewed as resources for improving the quality of education. Distance learning forms a range of essential competencies in all its participants: the analysis of opportunities and the selection of the most suitable forms and methods of interaction; solving problematic tasks; emotional stability as a result of working with constantly changing information in a situation of uncertainty.

The main risks of the established practice of distance learning in universities include: digital tolerance and technological and methodological literacy of teachers; the degree of acceptance of the learning conditions and satisfaction with the quality of the educational process in the distance form; the psycho-emotional stability of online interaction participants; maintaining high cognitive motivation; the formation of practical skills in students.

What we view as a prospect for further research is working with the identified risks and studying the problem of the readiness (psychological, methodological, and technological) of all educational project subjects to transition to the format of distance learning; the development of educational content for full-fledged online interaction with students; the improvement of digital platforms in terms of increasing their universality for distance learning participants.

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