Pandemic challenges for educators: transition from physical to digital classroom

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Abstract. The article looks into some challenges that university teaching staff has to face during the modern era of digitalization and especially during the transaction period from "physical classroom" to "digital classroom" provoked by the pandemic of COVID-19. The use of information and communication technologies (hereinafter referred to as ICT), tools for online teaching and learning, computer and digital literacy, digital skills and competencies are becoming important components of professional success. The transition to distance learning (especially due to the pandemic of COVID-19) has changed the modern academic world: now the effective use of digital technologies and educational resources is considered a key factor for improving and increasing the value of the learning process. As a result, students get their knowledge and educators share their theoretical and practical experience through an increasing number of digital technologies and resources. This article aims to describe and analyze the main types of available online tools and services that may provide productive work and interactive learning; to describe the challenges that educators face while transforming the academic environment into "online classroom". The authors applied a cabinet study approach to the analysis of theoretical database, the method of comparison and generalization of the obtained data. As a *result,* the article presents theoretical background of the ICT potential and their use in the educational process of modern universities.
Keywords: digital literacy, ICT tools and education, electronic platforms and services, digital transformation

1   Introduction

The COVID-19 pandemic was a unique lever that provided a massive shift in the academic process of any educational institution and directed it towards information and innovative technologies. Foreign and national scientists studying the massive transition to online learning noted that the pandemic has led to a reconsideration and new understanding of such key constructs of academic environment as academic infrastructure, educational platforms, and the readiness of teachers and students for online learning [1].

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The process of digitalization and informatization of modern education, strategies for the adoption of information and innovative technologies in the academic educational process are part of the global strategic concept of digital education, based on the principles and strategies developed by the EU [2, 3].

The mentioned above process in the system of higher education in the Russian Federation is in its active phase of development and can be characterized by the integration of various training components associated with the process of the 2020 pandemic, and, as a result, the transition to a distance learning format due to the active mandatory use of (ICT) in the educational process. The digital transformation of education is viewed as a systematic update of the required educational results in a rapidly developing digital educational environment: new content of education, different organizational forms and methods of educational work, recently updated forms of assessment of academic results and achievements. All these changes are aimed at preparing students for life and activity in a digital civilization with the active use of technologies [4, 5].

The launch and increasing importance of cross-cultural communication in any type of business has significantly increased the requirements for foreign language proficiency. Not only the study and knowledge of foreign languages, but also the development of cultural sensitivity of future specialists is of great importance in modern society, when the language is not just the means of human communication, but also – the means for the dialogue of cultures, where respect for another culture and cultural sensitivity are fostered. That is why, the study of a foreign language in a non-linguistic university, such as Financial University under the Government of the Russian Federation, is not limited to the set of lexical, grammatical units and the rules of their combinability, but is based on professional vocabulary, includes work with relevant texts of cultural importance, cross cultural study of the peculiarities of national culture and the culture of the language acquired.

Nowadays, in connection with the transition to the online learning, the requirements for the competence of a teacher in the field of ICT have increased. Today students and educators have to adapt quickly to the new realities of the digital format; learn how to carve out new educational routes and adapt and transform the existing methods and materials to a new, digital environment [6]. The modern academic environment of universities at contemporary stage is characterized by a high degree of integration of ICT in the educational process: educational objects are integrated into face-to-face lectures, become an integral part of educational courses and are provided to students online through different educational platforms convenient for the educators or chosen by the university. Learning platforms can be used both for blended learning, where face-to-face learning alternates with and complements online learning, and for fully online learning, i.e. a virtual digital classroom. In both cases, various means of communication and dissemination of information (for example, a blog or chat) can be used in combination with the training platform [7, 8].

2　　Methods

This study is focused on theoretical analysis of the relevant literature and modern national and international practical researches devoted to distance learning and pedagogical potential of information technologies, as well as to transformations, changes and transaction challenges in the academic processes in the times of global digitalization. The data obtained allows to identify and describe the main perspectives and challenges of the integration of digital technologies and resources into educational process.

3   Results

The analysis and the interpretation of the data obtained from the modern literature speak for the fact that today the digital educational technologies market offers a wide range of services and software for organizing collaborative online learning. These digital resources can be divided into the following types:

- services for the development and use of interactive applications;
- services for visualization of educational information;
- services for control automation;
- applications and services for preparing presentations;
- video conferencing applications;
- online whiteboards and classrooms.

The results of our research revealed the fact that the use of these digital tools directly affected the lay-out of the educational process itself, as well as led to some time-consuming "affects": paperwork, tests and paper reports are becoming a thing of the past while laptops, tablets, computers, which contain all the necessary academic information, are taking their place.

Modern technologies are designed to increase the level of efficiency of the academic process, as well as the process of obtaining knowledge and processing the information received. Analysis of the relevant literature suggests that there are three general categories of ICTs that should be used in teaching and learning [9-12].

The *first category* includes autonomous digital components used to support learning. These components include *video clips* (for example, a YouTube clip), *illustrations* (for example, photos and drawings), *modeling* (for example, an organizational process simulation or an electronic diagram), and *interactive evaluation resources* (for example, an online quiz, test, etc.).

The *second category* comprises general tools for communication and dissemination of information, such as blogs, chats, voice messages, electronic file sharing, web conferences, and social networks. It should be noted that these tools were not specifically designed for teaching purposes, however, as practice shows, they can be very actively used in the digital classroom and contribute to the achievement of the learning goal by providing means of communication in pedagogical scenarios [10, 13].

The third category is presented by software systems for running a course and is also called a *learning management system*, in which complex tools are educational software packages for the administration and delivery of online courses. Their main functions include: organizing and presenting course content, recording and tracking students, managing classroom activities, teacher-student communication, student assessment tools, and teaching materials. They are widely used by many educational organizations and include such platforms as Zoom, Teams, Googlemeet, etc.

The main advantage of the active use of ICT tools in the educational process from the perspective of an educator is the ability to automate control, the ability to work and present various types of information within one space of the digital classroom: audio, video, texts. Thus, we may claim that the use of ICT tools is not an end goal itself, but only a convenient means of teaching, as well as a convenient and useful tool for further professional activities of students [8, 7, 12, 14].

Interactive work within the "GoogleClassroom" platform allows students to study independently and work with the material and digital tools at their own pace, along their own educational route. Such work contributes to the individualization of training-thanks to

immediate feedback from the teacher, improving the quality of training – thanks to the possibility of working on mistakes, correcting them and understanding them either in an interactive dialogue with the teacher, or in an automatic system for monitoring learning [9].

4   Discussion

Trends in the digitalization of education are reflected in the active use of methods and principles of distance education, which has become even more relevant and received a powerful impetus to development during the COVID-19 pandemic. Thus, there is every reason to argue that distance education, based on the use of new digital technologies, is one of the main trends in the process of global digitalization of education. Undoubtedly, the integration of digital technologies into the academic process has a number of advantages, the main of which is the level and quality of control of the practical effectiveness of the learning process. In contrast to traditional methods of control, which in the modern methodological literature are already called "rough assessment of effectiveness" (for example, on the basis of final assessment), methods based on the use of digital technologies allow educators to more clearly and objectively assess their students in terms of time spent on certain educational tasks, cases, or situations; in terms of understanding new material and processing new information, etc. [11, 14].

The integration of a wide range of digital technologies into the educational process entails significant changes in the design of the methodology of teaching academic disciplines at the university, and also determines the choice of modern teaching tools. The conditions for organizing forms of group work and ensuring communication of all the participants of the educational process are current problematic issues in the transition to the e-learning format based on the use of digital educational technologies [15-17].

To continue working successfully in a digital educational environment, a foreign language teacher must have a high level of ICT competence, which includes not only the ability to work with webinar programs, such as Zoom, MS Teams, Skype, but also:
- prepare and submit the training material in the electronic form;
- choose from the entire variety of ICT tools exactly those that will contribute to the solution of various communicative and methodological tasks with the active interaction of all participants in the educational process.

It is important to emphasize that it is not enough for a modern teacher to be technologically literate and be able to build and instill appropriate technological skills and abilities in students. A modern teacher should be able to help students use ICT in order to successfully cooperate, solve emerging problems, master teaching skills and, as a result, become full-fledged citizens and employees [16, 17].

One of the problems that many teachers have faced in the process of transition to online education is the choice and proper use of available online tools and services for organizing a productive group or collaborative types of work and providing interactive learning with synchronous and asynchronous interaction between students and the educator.

5   Conclusion

In this article, the authors presented a brief digest of significant theoretical developments and contributions to the study of distance education and the use of modern technologies. The essential finding of the article is the assumption that modern educators and whole institutions of higher education support technology adoption and strengthen digital

collaboration; rethink and upgrade their teaching process with the view of technological advances and thus develop competitiveness by embracing technology innovations and shifting academic activities to the digital work-zone.

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