

## Conference Paper

# Higher School Faculty Staff in the Era of Digitization: Teaching's Activities Transformation and Problems of Professional Adaptation

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**Abstract**

This article is devoted to the study of the higher educational institutions teachers' professional adaptation problem in the context of digitalization. The purpose of this research is to analyze the main changes in the higher education staff's professional activities due to the digitalization of education, as well as the problems of a university staff adaptation to these changes. The relevance of the study is justified by the fact that the effectiveness of the implementation of information and digital technologies in the educational process largely depends on the success of the university staff's professional adaptation. The main methods of empirical research were students' questioning and semi-formalized interviews with the university staff. The study was carried out on the basis of Khakass State University in 2019 with the financial support of the Russian Foundation for Basic Research as part of scientific project No. 18-011-00681 A. 500 students and 39 teachers were interviewed (N = 539). The study has found that teaching in digitalization is experiencing a serious sociocultural transformation in addition to technological changes. Information and digital technologies form new principles for organizing the educational process, new forms of teacher communication with students and colleagues, new sociocultural environment of the university and, ultimately, a new role for the teacher in modern education. The study revealed that the digitalization of education entailed significant changes in all types of a university staff's professional activities — pedagogical, scientific and scientific-methodological. The main difficulties in the university staff's professional adaptation are associated with insufficient material and technical equipment of universities, constantly increasing actual load, low level of information culture and computer literacy. As a result of the study, it was found that university staff misunderstands the very phenomenon of education digitalization, referring to informatization and computerization, that, of course, prevents the successful implementation and effective use of digital technologies in education.

**Keywords:** teacher of higher education, digitalization of education, professional adaptation of teachers.

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## 1. Introduction

The characteristic features of the modern stage of society development are the processes of universal digitalization and informatization. Such a rapid development of information and computer technologies, as well as their active implementation in all spheres of a modern person's life, naturally affected the education system. Firstly, computer technology is increasingly involved in the organization of the educational process, and secondly, educators should teach schoolchildren and students, future specialists, to live in new dynamically changing conditions. Therefore, researchers in the field of education, evaluating differently the consequences of transformations occurring in education, agree that "the education system must meet the requirements of the times, that is, level of technological and social development. Moreover, it should be ahead of the development of society..." [3, p. 63].

The launched projects "Modern Digital Educational Environment in the Russian Federation" (within the framework of the state program "Development of Education" for 2013-2020), the national project "Education" and the federal projects "Digital Educational Environment", "Teacher of the Future", as well as the federal program "Personnel for the digital economy" of the national program "Digital Economy of the Russian Federation" further accelerated the introduction of digital technologies in education. However, despite all the promising predictions regarding the rapid development of digital education and even the crowding out of traditional universities with digital ones, researchers note that "there is no digital revolution in education," explaining this by the unpreparedness of all subjects of the education system — students, educators, and leaders of educational structures [6, p. 14].

The purpose of this study is to analyze the main changes in the higher education staff's professional activities due to the education digitalization, as well as the problems of university staff's adaptation to these changes. The study of this topic seems relevant, since effectiveness of all programs implementation for the introduction of digital technologies in education largely depends on the success of the of university staff's professional adaptation.

## 2. Methodology and Methods

To study the main changes in the teacher's activities and the problems of their professional adaptation in the context of digitalization, the scientific publications of domestic

scientists were analyzed. The study was carried out from the perspective of systemic and institutional approaches.

The scientific literature contains a lot of definitions of “digitalization of education” concept [1, 2, 5, 8, 9]. Taking into account all the complexity and diversity of the phenomenon under study, we will understand the education digitalization as the inclusion of computer, information and digital technologies in the educational process, using them as a tool for transferring knowledge and information from teacher to student, creating teaching materials, as well as the implementation of new innovative teaching methods and knowledge control.

The empirical base of the study was the materials of a sociological study, one of the tasks of which was to determine the degree and quality of the impact of informatization on teaching. The study was held on the basis of Khakass State University named after N.F. Katanov (Abakan, Republic of Khakassia) in 2019 with the financial support of the Russian Federal Property Fund in the framework of the scientific project No. 18-011-00681 A.

Research methods are students’ questioning and semi-formalized interviews with university staff. The sample is random, two-stage: 7 institutions were selected by lottery method (more than 75% of the total number of institutions providing vocational training in higher education programs); then from each institute 10% of the total number of full-time teachers and students in the structural unit were interviewed. A total of 500 students and 39 teachers were surveyed.  $N = 539$ ). An empirical study used a combination of quantitative and qualitative methodology. Data processed using Vortex 8.0.

### 3. Results and Discussion

Of course, first of all, the changes taking place in education affect the university staff who carry out pedagogical activities and must be ready to apply all these new innovative teaching methods, computer devices, electronic educational platforms, etc. Therefore, “a special responsibility for the formation and improvement of digital skills, the digital culture of the modern generation lies with the entire pedagogical community, which is significantly behind their students in terms of the use of such technologies” [5, p. 92]. As a result, new requirements are presented to a modern teacher — he or she “must have digital literacy, the ability to create and apply content through digital technologies, including computer programming skills, search, information exchange, communication” [1, p. 179]; “A modern teacher should become a moderator, an educational trajectory

developer, a tutor, a project training organizer, an online educational platform coordinator, a startup mentor, a game master, a game pedagogue, a mind fitness trainer” [5, p. 93].

But, despite the fact that the importance of using digital technologies in educational activities is emphasized in state programs and national projects, and clear description of the characteristics of a modern teacher in the scientific literature neither in documents nor in scientific publications we have been able to find a clear strategy for professional teacher training and advanced training (specifically in the field of digital technology). As a result, in practice, the level of information culture, computer literacy and skills of university staff sometimes is lower than that of students.

The study has shown that the problem of university staff’s adaptation to the introduction of digital technologies in education is even more critical at provincial universities. The interviewing of university staff at one of these universities has revealed a percentage of teachers who do not have computer skills at all and find it difficult to learn (10.3%).

Moreover, the concept of “digitalization of education” is often identified with the concept of “informatization of education” and in the public sense is reduced to the simple use of computer technology in the educational process.

According to the results of our study, the introduction of information and computer technologies in the educational process is, according to university staffs, the third most important change in the Russian education system. But at the same time, the emergence of new innovative teaching methods has the least impact on pedagogical activity. That is the digitalization of education and the change in teaching methods are not related to processes for teachers. They use computer equipment and electronic resources to prepare for classes and organize the educational process, but they prefer to conduct classroom exercises and control procedures in a traditional form.

Speaking about the reasons for refusing to use information technology and innovative methods in teaching, teachers point out the problem of the material and technical equipment of classrooms with multimedia installations, computers with Internet access (53.8% of respondents).

The regular use of multimedia presentations, electronic testing, and video accompaniment of lectures requires appropriate equipment, which the university does not have in the required amount. The number of classrooms equipped with the necessary equipment is usually limited. University staff attempts to independently install laptop computers and projectors for conducting classes, but, firstly, it becomes difficult when

the teacher conducts classes in different student buildings, and secondly, there are problems with connecting to the Internet.

The problem of classrooms computer equipment concerns not only the availability of necessary equipment, but also its use and further technical support. During the study, it turned out that teachers have difficulty turning the projector on / off, adjusting the image or sound (for example, for listening), etc. In most cases, classrooms are only preparing to demonstrate slide presentations; using video or audio accompaniment during classes is problematic because there are no stationary speakers.

The interview has also revealed that in some cases the availability of computers and even computer classrooms is useless for conducting practical or laboratory classes in some disciplines, since they do not have special programs installed, for example, for data processing.

It is also worth to notice that the process of education digitalization in Russia takes place against the backdrop of reforming the entire education system, which entailed a sharp increase in the actual employment of teachers. Thus, the lack of time to prepare presentations, electronic texts and the development of interactive classes was the second most popular (after material and technical equipment) reason for teachers to abandon innovative teaching methods. About 30% of respondents note that they have difficulties with the efficient allocation of their working time — too many changes that require additional labor for teachers take place simultaneously. Therefore, while agreeing that the use of innovative methods and digital technologies in the educational process is extremely important for the formation of the necessary competencies of a modern student, some teachers are ready to use new information resources, digital educational and methodical complexes based on cloud technologies, visualization and gamification technologies, online resources courses, etc., but do not create them themselves.

It should be noted that university staff does not seek to actively use innovative methods and digital technologies, because they doubt the students' readiness to switch to digital education. Yes, modern young people actively use information and digital technologies in everyday life, but one cannot say with confidence that they are ready to use them as an educational resource.

Declaratively, digitalization is designed to make education more attractive and affordable for students, to motivate them to gain new competencies, while allowing them to build an individual educational path. But in this case, the debate remains the question of the readiness, ability and desire of modern students to take responsibility for their own education, its content and organization. As the researchers rightly notice, for

the modern generation of students, such features are modern students' characteristic: "distracted attention, the habit of consuming content in small parts, clip thinking, easy online interaction, active social interaction on the network, visual perception, desire for personal freedom, desire for individual educational trajectories" [7, p. 184]. In addition, the transition to digital education requires students "skills of self-organization, planning, self-motivation" [1, p. 180].

The teachers' hypothesis that students were not ready for the rational use of digital technologies for educational purposes was partially confirmed by the interview results. Our study has shown that the vast majority of students use computer technology, electronic and Internet resources to prepare for classes, tests / exams or to do individual work. At the same time, modern technologies consider them not as a blessing that enables self-education, but rather, on the contrary, as a blessing that can facilitate their learning process and minimize their labor costs for self-training.

In our opinion, the positive trend is that, according to the results of the interview, more than half of students (52.8%) regularly turn to electronic materials posted on various educational platforms. Especially popular among students are such electronic platforms as "Open Education", "PostScience", "Lectureium", "Web.University". But at the same time, 32.2% of the interviewed students never heard of the existence of electronic educational platforms, and 10.2% of those who use their services could not indicate their name.

Based on this fact, we can assume that this innovation has not yet become so widespread in the student's community, but it is possible that educational platforms will soon become more popular and an increasing number of students will use the resources of electronic platforms not only in the educational process, but also for self-education and personal growth.

The development of information and digital technologies is changing the university environment not only technically, but also culturally and organizationally [8, p. 330]. The role of the university staff changes, new informal rules and norms for the interaction of students and teachers, as well as teachers among themselves, are being formed, which the teacher also has to adapt to.

A modern teacher is an online teacher. Earlier, students sat for hours near the doors of the department to meet with the teacher, get advice or submit an essay for verification, but now almost at any time you can contact the teacher by e-mail and leave a message on the social network or messenger. Thus, the concept of the teacher's working time becomes very conditional, now it is limited not to the time when he \ she is at work, but to the time when his \ her mobile device can receive messages.

At the same time, communication between the teacher and the student in social networks and instant messengers is regulated by the rules of electronic correspondence and therefore can significantly differ from full-time interaction. In electronic correspondence, the teacher can allow himself \herself using colloquial expressions, network slang words and even various animated accompaniments of his \her messages (for example, emoticons expressing emotions, etc.).

The interaction between the teacher and the student on the network is becoming less formal, which on the one hand, of course, makes it easier for students to communicate with the teacher. On the other hand, the preference for correspondence consultations and distance communication between students and teachers on the network raises some problems. Firstly, in electronic correspondence, communication between subjects of the educational process is regulated not only by the rules and norms of the educational environment, but also by the norms of Internet communication. Therefore, in network communication, the problem of boundaries and the relationship between the actions of all norms emerges. Both students and teachers must have a high level of information culture, communication culture, literacy and concise and clear presentation of thoughts in text form.

Secondly, both in digital education in general, and in the interaction of teachers and students, the problem of a balance between offline and online communication appears [7, p. 184]. Full-time interaction of a student with a teacher is of great importance not only in educational terms, but also in socio-cultural ones. Communicating with a teacher while studying at a university teaches a student to lead a discussion, defend his \her point of view, create communication in compliance with subordination, which plays a big role in the formation of a future specialist and his \her professional socialization. But it is much easier for a modern student to create communication with a teacher on the network than in full-time interaction; as a result, students do not properly form part of their communication skills.

As a result of the education digitalization, not only pedagogical activity has undergone changes, but also scientific, and scientific-methodological. The emergence of electronic scientific libraries, databases of scientific articles, citation index calculation systems, educational portals on university sites, etc. changed the criteria for evaluating the pedagogical and scientific activities of a university staff. Great importance for representatives of administrative structures and university administration is not scientific and teaching activity as such, but how it is reflected in the digital space. It is not the teaching process itself that becomes more important, not what is happening in the classroom, but what is contained in the various elements of the educational and

methodological complex of the discipline posted on the educational portal; It's important not only to publish scientific articles, but to publish them in journals with a high impact factor, it is important that your work is not only read, but cited as often as possible, etc. Such a desire to achieve the necessary quantitative indicators often raises the problem of the formal attitude of teachers to their professional duties, which finds expression in the growth of simulation practices and imitations in the activities of teachers [4, p. 156].

## 4. Conclusions

Thus, a theoretical analysis of the scientific literature and empirical research data allow us to conclude that university staff has difficulties in adapting to new conditions. The occurrence of problems is associated both with objective conditions (low level of material and technical equipment and a sharp increase in the actual amount of work), and with the personal, social and professional qualities of an individual teacher (lack of necessary digital skills, low level of information culture and computer literacy). Also, the study made it possible to fix the problem of teachers misunderstanding both the very phenomenon of education digitalization and its impact on their professional activities. This circumstance indicates that for the successful implementation of the idea of digital education it is not enough just to set such a task for universities, it is necessary to determine the functions of a modern teacher and his role in the digital educational process.

The results of the study seem to be significant, since they made it possible to identify the problems of introducing digital technologies into education at the initial stages of the implementation of federal projects and national programs, and therefore be useful to educational authorities in developing measures aimed at preparing faculty for new digital education conditions.

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