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Psychological Aspects of Pedagogical Activity in Distance Learning: Problems and Prospects

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***Abstract*—This paper presents an analysis of problems associated with using distance technologies in the higher education system. It deals with the necessity of taking into account the psychological component of pedagogical activity in organizing effective distance learning. Building a digital educational process is a complex task that requires scientific substantiation and a new psychological and pedagogical theory. The analysis of the literature studied made it possible to single out a number of problems: the problems of communicative interaction of subjects of educational relations, personal anxiety and unreadiness of teachers and students to work in new conditions, the importance of taking into account the values and attitudes that teachers and students possess. Special importance of motivation as a factor determining the student's movement towards effective educational activity is emphasized. Students must be able to motivate themselves, be independent and take responsibility for their own learning. With the intensive development of information technologies, the range of competencies of participants in educational relations should expand, which will allow them to quickly adapt to the changing conditions of the digital world. The article presents the results of the analysis of modern-day research on digitalization in higher education. It explores some important psychological aspects of pedagogical activity in online learning such as the teacher's readiness for distance learning; their desire and ability to transform the content of educational activities according to the specifics of the distance learning format; their awareness and acceptance of the benefits of online learning in higher education.**

Keywords—distance learning, online learning, higher education, pedagogical activity, psychological aspects of pedagogical activity

I. INTRODUCTION

The development of modern technologies accelerates digitalization in various areas and countries of the world, including education. Digitalization of education is supported at the state level, as it allows for organizing continual learning. Distance learning is gaining popularity as a teacher-led learning process, fully networked or integrated with traditional learning [1].

Distance learning is seen as a promising form that meets the modern conditions of education, making it possible to include modern technologies in the educational process for

both those who teach and those who study. While teaching this way, not only the structure of the educational process changes, but also the content, methods, and forms of teaching. Distance learning has its own specifics, due to the psychological characteristics of all participants in the educational process. It has both positive features (e.g., it develops independence, mobility, responsibility; it involves active and interactive teaching forms and methods; it enables giving immediate evaluative reinforcement) and the difficulties that one has to face. Firstly, it has difficulties associated with the psychological characteristics of both teachers and students. Secondly, there are difficulties in implementing communication between the subjects of the digital learning environment in the educational process. Thirdly, difficulties may occur in monitoring the quality of content acquisition. Fourthly, difficulties may arise in searching for the most effective forms of work in distance learning and ways of giving feedback.

Facing the risk of substituting digitalization of education for its digitization raises questions related to the transformation of the educational process. Digitalization of higher education introduces both technical and psychological changes in the qualification requirements for teachers, it calls for the development of new professional competencies with account of the psychological characteristics of pedagogical activity in the digital learning process.

A review of scientific literature and modern works on the research problem showed that over the past 20 years many authors have been paying attention to the fundamental difficulties of introducing digital technologies into the educational process. Thus, the American researcher P. Norton wrote a long time ago that information technologies are used in education for traditional forms of education, instead of using their exceptional capabilities in a new direction [2]. In the current situation of the coronavirus COVID-19 pandemic and the transition to universal distance learning, the problem has become aggravated again. According E.S. Polat, most often in digital education there is a mechanical integration of the capabilities of electronic systems into the existing traditional education system, since no pedagogical or psychological-pedagogical theory has been developed that organically includes information technologies. In her opinion, one should start from didactic and cognitive goals and objectives [3]. A team of authors (V.I. Blinov, P.N. Bilenko, M.V. Dulinov) refer to the concept of digital didactics as a scientific discipline about the organization of the learning process in the digital learning environment. According to the authors, the construction of the digital educational process based on new didactics makes it possible to overcome the problematic nature of the situation that has developed with the digitalization of education, when the dynamic development of digital technologies and means is combined with the preservation of traditional (pre-digital) forms of organization of the educational process and teaching technologies [4].

The problem of modern education is the development of programs and teaching methods that are relevant to the conditions of the digital learning environment.

The noted problems naturally lead to certain psychological consequences for the subjects of the educational process.

Russian authors A.V. Leifa and E.V. Pavlova raise the problem of the psychological readiness of teachers to work in new conditions [5].

E.F. Zeer and his colleagues draw attention to the fact that according to statistics not all teachers show interest in electronic resources and are ready to actively make use of information technologies in their work [6].

D.S. Dmitriev analyzes readiness of university teachers to use e-learning tools in their professional activity and identifies four components of it: value-motivational, cognitive (methodical readiness), methodical-operational (technological readiness) and evaluative-reflexive (expert readiness), which are important for effective adaptation in new conditions [7].

In her works, O.V. Kuzmina emphasizes the importance of attitudes and motives of the individual in the structure of readiness, emotional, cognitive and socio-psychological components. She draws attention to the fact that the level of the teacher's daily workload should not lead to the formation of his emotional apathy and tension. Both of these states are manifested, among other things, in the person's rejection of any changes, their interpretation as an additional complication of work activity. Also, the teacher must understand why these changes are necessary and share them at the level of personal meanings and values [8].

In a number of publications devoted to education (G. Rasko, E. Oborn, M. Barrett [9]; H. Barr, J. Ford, R. Grey, N. Helm [10], etc.), the importance of expanding the range of competencies that allow you to quickly adapt to the changing conditions of the digital world, is noted. M.J. Barrett, K.B. Alphonsus, M. Harmin, et al. determine the most popular digital competencies and conditions required for the development of highly qualified students and university teachers [11].

Among the difficulties of online learning, including technical, financial and organizational ones, D. Amemado highlights the problems of student motivation, insufficient self-organization skills, as well as teachers' feeling unready to work online [12].

A lot of authors state the problem of dialogue between the teacher and the students as one of the core shortcomings of digital education. A.A. Verbitsky stresses the importance of the sense-making influence of the perceptual component of communication on the productivity of perception and assimilation of information, its transformation into knowledge [13]. This means that the processing of information by a computer is not a mechanism for generating knowledge from it by a person, and it is necessary to seek the actual psychological laws and mechanisms for understanding this process. Analyzing the state of the problem of digitalization of lifelong education, S.Yu. Stepanov, P.A. Orzhekovsky, D.V. Ushakov show the importance of the teacher's ability to create an open dialogue or polylogue with students, introspectively rethink and overcome intellectual dead ends, be personally involved in attempting difficult tasks and problem solving. The developing effect of joint mental activity, in their opinion,

disappears when it is mediated by various sense-making contexts, which inevitably arise due to temporal fragmentation during distance learning [14]. E.S. Polat notes the importance of structuring and organizing distance learning in such a way that students have the opportunity to reflect, compare different points of view, different positions, formulate and support their point of view, otherwise there is no opportunity to develop critical and creative thinking, which is so necessary in the modern information society [3].

In the study by O.N. Beketova and S.A. Demina on the advantages and difficulties of distance education, attention is focused on communication problems resulting in the complexity of organizing students' teamwork, the change in the role of the teacher and the student in the context of digitalization. It is assumed that the transition to digital education will lead to a decrease in the role of the teacher in the educational process with a sharp increase in the importance of self-study [15]. In the digital educational process, many traditional functions of a teacher are losing their significance (a "bearer of knowledge", a storyteller, a controller, etc.). According to D.E. Gasparyan, the development of information technologies contributes to a change in the relationship between the key subjects of education and the influence of the teacher's individuality on the student decreases. Moreover, the teacher has to "try on" different roles [16].

In a textbook on pedagogical technologies in distance learning, E.S. Polat states that, firstly, for a teacher the role of a course designer is gaining importance as the rapidly evolving technology platforms for course design require knowledge and skills in this area. Secondly, the important motivating and supporting function of the teacher (the role of the tutor) is being more and more recognized, e.g. in promoting students' advancement in the flow of information, in facilitating the solution of emerging problems and contributing to the successful achievement of educational results. Thirdly, an active and intense feedback from all participants in the educational process is required from the teacher [17].

Modern information and communication technologies make this interaction much more active and interactive, but this requires from the teacher additional efforts and professional competencies. Foreign authors of competency models provide examples of both technical skills and skills that are part of pedagogical competence. Emphasis is placed on such skills as information literacy, communication and collaboration skills in a digital environment, the ability to create digital content, personal data protection skills, and skills to ensure the user's psychological health. S. Carretero, R. Vuorikar, and Y. Punie in a Science for Policy Report by the Joint Research Center (JRC), the European Commission's Science and Knowledge Service, argue the necessity for "harnessing the potential of digital technologies to innovate education and training practices, improve access to lifelong learning and to deal with the rise of new (digital) skills and competences needed for employment, personal development and social inclusion" [18].

T.A. Vorobyova analyzed foreign studies of the psychological characteristics of e-learning. A number of these studies note that the type of perception, the ability to independently manage the learning process and motivation are important components of successful e-learning. The cognitive process is effectively activated only when the student's activity system is motivated by targeted effects of the electronic system and the teacher's activity. For successful distance learning, students must have such qualities as self-discipline and responsibility, initiative, perseverance, dedication and honesty, they must be able to control and evaluate their learning process [19].

Based on the analysis of the problem under consideration, the most important psychological aspects of digital education are changes in the nature and weight of dialogical communication between participants in the educational process. It is obvious that today not all teachers are ready to interact with students by means of information technologies, most often, they do not have sufficient digital competencies for this, and also do not have psychological readiness for changes associated with the introduction of digital education. Students often do not have a sufficient level of motivation, independence and responsibility for the results of their own learning.

II. METHODS

A specific method of exploring the psychological aspects of introducing digitalization into education is a theoretical and methodological analysis of modern research on this issue, a review of pedagogical and psychological scientific literature, which makes it possible to highlight and describe the positive and negative psychological effects of digital education, the influence of psychological characteristics of participants of the educational process on the quality and effectiveness of implementing distance learning.

III. RESULTS

Within the framework of this article, we made an attempt to analyze and systematize the available Russian studies, the object of which was distance learning and its participants. The previously highlighted psychological aspects of pedagogical activity, such as the teacher's readiness for distance learning, the desire and ability to transform the content of educational activity to the specifics of the distance format, awareness and acceptance of the benefits of online learning, were the subject of this analysis.

Attempts to scientifically comprehend and analyze the problem under study are mainly descriptive in nature and relate to individual moments of introducing distance learning forms for a particular school subject or a special group of students. More analytical work will begin when there is a sufficient body of empirical data in pedagogical methodology.

The study by A.A. Beloglazov, L.B. Beloglazova, I.A. Beloglazova, O.L. Maltsev, E.V. Trubacheev, S.A. Nikiforova, V.V. Popenko [20], devoted to the analysis of Massive open online courses (MOOCs) of Russian universities. In it, the authors, using the method of content

analysis of user reviews of the most popular online courses, highlight the following weak points of MOOCs, which, in our opinion, partially overlap with the problems of distance learning at a university. The authors of the study, noting the high potential of online courses and the strengthening of their importance in the educational environment, speak of the need for a targeted solution to the key pedagogical problems and limitations of MOOCs such as lack of interactivity, inadequacy of practical classes and weak opportunities for the development of practical skills, insufficient quality of lecture material, and low-quality tests. The authors emphasize that the mechanical transfer of experience and educational material from a standard classroom course to MOOCs is unacceptable, and they also consider the development of educational content, initially focused on the specifics of the training format and the target audience, as a condition for a successful online course. We see that these difficulties are caused both by insufficient technological readiness for interactive learning and by the psychological unwillingness of teachers to accept a new format and rebuild their teaching activities.

Another pressing issue is the resistance to online learning from the teaching community in Russia. The Higher School of Economics (HSE) study "Problems of Transition to Distance Learning in the Russian Federation through the Eyes of Teachers", conducted in April 2020, notes that 84% of teachers believe that their workload has increased after the transition of schools to distance learning [21]. This is due, in our opinion, both to the lack of ready-made educational materials on the online platforms of educational institutions, and to the lack of purposeful adaptation of teachers to distance learning.

As shown by a HSE study, conducted in 2019, teachers of universities with a scientific degree themselves do not assess their skills in remote technologies as being of high-quality (3.2 points out of 5), and every fourth of them has not once in the last three years used remote video communication for participation in webinars and video conferences or similar events (https://issek.hse.ru/news/350448456.html).

The results of a study by the Ministry of Education and Science of the Russian Federation, conducted jointly with the Institute of Social Analysis and Forecasting of the Russian Presidential Academy of National Economy and Public Administration, among 33,987 teachers, which is about 15% of the entire general population of the teaching staff, showed that teachers are organizationally ready to switch to distance learning formats, but psychologically they do not accept such a sharp break with traditional face-to-face training. According to the survey, 34% of teachers believe that they have no place at home for comfortable teaching, 66% indicated that they do not like working at home. In addition, 85.7% reported that teachers had less free time, which gave them an idea of an increase in the workload. 96.2% of teachers personally switched to distance education; 91.0% of teachers consider the measures taken in their educational institutions to be sufficient; 87.8% of teachers believe that it is better to conduct classes in their courses in a full-time format; 67.0% of teachers do not agree that the majority of lectures and seminars will be transferred online in a year; 53.2% of teachers took courses in online learning in the last month.

Thus, the current radical transition to distance education causes rejection (or disappointment) of teachers, which is to a greater extent related not to the level of qualifications, but to the destruction of the usual way of life and the need to consider their workplace differently and look for specific approaches to teaching. The acceptance of distance education is more influenced by family relationships and personal preferences for working from home.

The teachers who are most adapted to the challenges of distance education are those who share liberal views on the educational process (greater freedom for teachers and students in choosing learning formats) and representatives of military disciplines who are more disciplined and accustomed to performing assignments. It is possible that such a reaction is associated with a sharp, almost instantaneous transition to unusual forms of work, when the majority of teachers did not yet have the necessary online skills and had to go through a "zero cycle" in their development. Perhaps with the acquisition of such skills and the improvement of the necessary infrastructure, the situation can change.

36.5% of the respondents agree with the change in education towards individualization and adjustment for each student, while 46.1% disagree. 41.5% of the respondents agree and 42.8% disagree with an increase in the teacher's freedom in choosing the methods and techniques of teaching. Among those who see the future of higher education as a sphere of free and individualized formats for the transfer of knowledge, the majority are positive about the transition to distance learning and hope that the quality of education will improve as a result.

The main request of teachers comes down to three components: material (provision of computer equipment and software); communicative (environment for communication, necessary and sufficient to support distance learning and inclusion in a team, and maintain a high level of learning); organizational (reducing bureaucratic pressure and providing more freedom in choosing the means and methods of teaching).

The main threats associated with the impossibility of liberalizing education and the transition to a distance format, are the following: a decline in students' motivation to learn; lack of students' skills and abilities to maintain discipline and diligence in distance learning; emotional breakdowns of both students and teachers; increased workload on teachers; lack of an individual approach in the education system, impersonality; inability to control the level of knowledge; restriction in a number of areas (primarily technical and mathematical) on the remote transfer of knowledge; formalization of education processes, a tendency to stereotyped, unified solutions [22].

Thus, distance learning is considered by teachers as a temporary forced measure. The total digitalization of higher education during the COVID-19 pandemic forced teachers to use online learning technologies and see the possibilities of using them in the educational process, which can serve as an impetus for the development of full-fledged distance education.

IV. Discussion

90% of students, according to UNESCO as of March 23, 2020, as a result of the outbreak of COVID-19 switched to distance learning. The dramatically changed reality in the field of education has caused a surge of research devoted to the specifics of transferring the entire curriculum to a new format. One of the leading research problems has become the problem of the effectiveness of distance learning. Thus, the main topic of research at the Institute of Education at the Higher School of Economics is the assessment and forecast of the possible consequences of the global transition to distance learning, as well as planning measures to compensate for losses and minimize risks (https://ioe.hse.ru/sao_lost). On the other hand, there are a number of studies (Means et al.; Shachar, Neumann; Patrick, Powell) that deny educational losses in the context of technologically secure and well-built distance learning. Thus, Means et al. note that "online learning conditions produced better outcomes than face-to-face learning alone, regardless of whether these instructional practices were used" [23, p. 51]. A study by Shachar and Neumann shows that "e-learning proprietary colleges / universities through course design, instruction, and technology create a virtual global learning community experience that is not any hindrance to students' social, cognitive, and teaching interaction" [24]. Patrick and Powell wonder if online learning is effective and refer to the results of a meta-analysis and review of online learning studies from the U.S. Department of Education, which concluded that "online learning offers promising, new models of education that are effective" [25]. Access and technology are beginning to be seen as the cornerstone of quality distance learning. And if the issues of the accessibility of online education are rather an economic component, then the issues of technology are directly related to the capabilities of the subjects of the educational process. P. Kelly, Y. Coates, R. Naylor note that as the educational system improves, the emphasis should shift from providing access to achieving success, and the main function of the teacher is to effectively manage the educational experience that students receive [26].

The main mistake of organizing distance learning is its construction by analogy with the full-time format, filling the activities of the subjects of the educational process with similar content, which, in turn, inevitably leads to losses in the quality of learning. Here we can talk about both students and teachers being not ready for the online format, about teaching and learning "by inertia", the inability to transform the content of educational activity, unwillingness to see and use the advantages of distance learning.

When organizing distance learning, it is necessary to raise and resolve issues of a qualitatively different goal-setting, motivation, educational actions and pedagogical technologies, the result and methods of assessing its effectiveness. Awareness of the need for a meaningfully different way to achieve an educational result and building a qualitatively different educational trajectory is becoming a priority. Only in this case it is possible to talk about increasing the legitimacy of distance learning and the effectiveness of further digitalization of education.

V. Conclusion

University leaders and other important education players need to build on educational science and introduce technological innovations into practice to ensure that the current shift to online learning or, in the future, blended learning meets the expectations of education. It is important to study the effectiveness of such changes, the key criterion of which is taking into account the psychological aspects of pedagogical activity. First of all, this refers to the teacher's readiness to see the goals of distance learning not in the fact that it is a "bad" replacement for full-time education, but in setting new teaching goals. Russian distance learning is still fighting for its content, without reflecting on its effectiveness as a full-fledged form of education.

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