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PREPARATION OF A "DIGITAL TEACHER" IN A MODERN UNIVERSITY

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Abstract

The authors reveal the essential characteristics of the concept of "digital teacher", the specifics of the professional training of a future digital teacher in a modern university in the context of a distance learning format. The aim of the study was to study the personal attitude of students of pedagogical specialties to distance learning, the relevance of the trajectory of the "digital teacher" in a number of other personally significant trajectories of professional development of future teachers. The results of a comparative empirical study conducted with students of the Pedagogical Institute of the Belgorod State National Research University in 2019 and 2020 are presented. The tendency of increasing the priority of the distance learning format and the "digital teacher" trajectory among junior students has been revealed.

Keywords: future teacher, professional training at a university, digital teacher, distance learning, digital competencies.

抽象的

作者揭示了“数字教师”概念的本质特征，在远程学习形式的背景下，现代大学未来数字教师专业培训的具体细节。该研究的目的是研究教育专业学生对远程学习的个人态度，“数字教师”的轨迹与未来教师专业发展的许多其他个人重要轨迹的相关性。介绍了2019年和2020年与别尔哥罗德国立研究大学教育学院的学生进行的比较实证研究的结果。初中生远程学习形式和“数字教师”轨迹的优先级上升趋势已经显现。

关键词：未来教师，大学专业培训，数字教师，远程学习，数字能力。

Introduction

Digital pedagogy today acts as that obvious reality that occupies a strong position in the educational space, shifting the emphasis from

personal physical interaction to interactive, personalized, constructivist interaction in the information environment. Factors such as new information technologies and the digital environment, new economic requirements for

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personnel [12], new “digital” students, as well as pandemic risks affect the intensive construction of the digital educational process. It, in turn, requires significant changes in the skills and styles of interaction between the teacher and the student, new educational models in the context of digital and network technologies [4]. In this regard, a modern teacher must be able to quickly change approaches to teaching, considering the digital capabilities of the school or open Internet resources; analyze the educational behavior of the student, his request for new knowledge, skills and competencies based on interests, needs and characteristics. Digital pedagogy and “digital school” [15] inevitably transform teachers into “digital educators”.

In foreign pedagogy, the term “digital pedagogy” has appeared relatively recently [18], and this concept is not synonymous with “online learning”: “the essence of digital pedagogy is not so much the direct use of digital technologies in teaching, but rather, in the application of these tools from the point of view of critical pedagogy” [18]. It seems that in the light of this approach, digital pedagogy can be attributed mainly to university education, and online education - to technologies that are used in both higher and secondary schools. The “digital educator” and “digital student” have more freedom in choosing the learning path than a school teacher and a high school student [19].

A digital teacher is a representative of digital pedagogy who has the knowledge, skills and habits of safe work in the field of digital technologies, realizing ICT competencies and a system for transferring them to a new generation.

In education, as in business, the use of technology provides a powerful competitive

advantage. A teacher who goes beyond the chalkboard and homework from the textbook will have more interesting and effective lessons than his conservative colleagues.

1. To love technology - sincerely. In teenage terms, a digital teacher should be IT-friendly. He must skillfully juggle with different tools: create educational quizzes, quests, make visual presentations, upload lesson materials to the "cloud", be available on social networks and instant messengers, etc.

2. Look for opportunities, not equipment. Today, there is not a single subject in the teaching of which the use of technology would be inappropriate - both remotely and in person. This even applies to physical education. After all, a teacher can, for example, monitor the performance of students during different types of activity - for this you only need a smartphone and a fitness bracelet. In addition, you can take time-lapse footage of the exercise and show children mistakes when running, serving the ball, etc.

3. Use different communication channels and technologies. Social networks provide many opportunities for free. They go far beyond group chats with the file sharing option. They already have live streams, video calls, polls, educational play simulators and much more that the digital teacher can use to make their lessons interactive and varied.

4. Remember personal charm. An important point: all these tools are only teacher aides. 80% of the effectiveness of training is still determined by the personality of the teacher. To teach math, in essence, all you need is pencil and paper. Perhaps, even today, this may be enough for a good teacher. But if we want the students to have

a desire to do something on their own, to immerse themselves in the topic, then knowledge of the subject and the teacher's charisma alone may not be enough [17].

Materials and Methods

In the article used research methods such as comparative analysis, mathematical statistics, observation, questionnaire survey, work with documents, as well as the results of a comparative empirical study are presented at the end of the article.

Review

As noted by O.S. Sidorenko, a digital educator, is a specialist who thinks in a new way, sets and solves new tasks of his professional activity based on digital technologies and tools. This leads to a change in the system of values and motivations, to the need to master new professional competencies and methods of activity [15].

According to the views of A.M. Kondakova, a digital teacher is presented as a bearer of competencies for the development of thinking and various types of activity. Professionalism in this is the key to the success of the socialization of students in the digital economy, which is formed from preschool age as a key competence. The task of the teacher of the digital age is to create new knowledge in communication, productive interaction and joint activities [7].

The massive introduction of digital teaching aids also requires major changes in the preparation of a new, future "digital" teacher at the university. In the process of professional training, a future digital teacher must master new types of activities based on the principles of digital

didactics, teaching methods and techniques that have appeared in the environment of networked educational communication. In order not to be in a "catching up" position, a future teacher in the process of studying at a university needs to master not only the technology of creating educational presentations and the skills of working with an interactive whiteboard, but also the ability to enter into scientific and methodological collaborations with colleagues around the world; to master simulators that help the student to prepare for VPR, USE, GIA; act as an aggregator, collecting and selecting the best resources for your students; work with texts characterized by hypertextuality, synthesis of multimedia and verbal structures, active use of infographics, augmented reality and other elements of expressing meaning [5].

That is, the professional training of a future teacher in a modern university should be seriously focused on the professional trajectory of a "digital teacher" as one of the most relevant in a number of such established areas of professional development of a future teacher as a subject teacher, teacher-educator, teacher-facilitator (tutor, mentor/trainer), teacher-manager, teacher-researcher, teacher-entrepreneur. In the competence model of the teacher of the future, digital skills take a confident position, along with the skills of teamwork (cooperation), leadership, self-development, openness to new things, social activity (caring for others), systemic and critical thinking (competent implementation of information processes), intercultural and social tolerance. [13, 16].

According to a number of researchers (Blinov V.I., Sergeev I.S., Yesenina E.Yu. and others), in the near future, the role of the teacher in the

digital educational process will expand: an integrator-mediator between the virtual and real world, a network teacher - curator (curator of an online platform), an instructor in Internet navigation, an analyst-corrector of a digital footprint, a web psychologist, a methodologist-architect of digital teaching aids, a developer of educational (game) environments. These roles will require expanding the range of information and communication technologies that a digital teacher will have to master: electronic identification technologies, speech recognition technologies, virtual reality, augmented reality, the Internet of things, distributed ledger technology (blockchain), digital two technologies, additive technologies (3D printer) [2].

At the moment, the digital teacher and digital pedagogy are implementing their content in a distance format of organizing the educational process. Distance learning, as a form of organizing interaction between participants in the educational process, is distinguished by the use of ICT, digital means of communication, an orientation towards the implementation of the information competence of a digital teacher, the formation of student / student competencies in the field of innovative technologies [3; 6].

Results

The educational process within the framework of distance learning is organized by a system of ICT agents: messengers WhatsApp, Viber, Telegram; social networks VKontakte, Facebook, etc. Zoom, Skype platforms - video conferencing; Yandex.Mail, Mail.ru mail, Gmail, etc., which ensure the interaction of participants in the educational process by e-mail; Internet resources that allow working with hypertext; cloud services

Yandex Drive, Google Drive, etc., organizing an additional function for the transfer of video and audio information; Microsoft Office editors: Word, Excel, PowerPoint, providing work with text and graphic information, spreadsheets, databases, etc. To unite all the above-mentioned ICT components are called e-learning / distance learning systems (SEA / LMS).

The distance learning format has become an innovation in the school education system, while in the vocational education system it has existed for a long time within the framework of part-time, part-time forms of education. The range of issues devoted to the positive and negative aspects of the introduction of distance learning in schools and universities has been considered quite widely [9; 10; 11], however, the attitude of participants in the educational process to this form of education remains an urgent issue in the modern educational space. In this regard, the purpose of our research was to study the personal attitude of students of pedagogical specialties to learning in a distance mode.

In accordance with the empirical task, a survey was carried out among 1-5-year students of the Faculty of Mathematics and Natural Science Education of the Pedagogical Institute of the Belgorod State National Research University. We analyzed and compared the results of studies dated December 2019 [1] and December 2020 [8].

The research involved full-time students who were surveyed in 2019 (209 people) - students studied in the traditional format and considered the option of distance learning only in terms of additional educational opportunities, and in 2020 (215 people) - students study in distance format and have the opportunity to assess the benefits,

relevance, positive / negative aspects of this form of training based on personal experience and practical observations.

In the studied problem of the attitude of students-future teachers to the remote form of the implementation of the educational process, the central point is the actualization of the priority attitude of the respondents to distance and traditional formats of education. The ratio of the results for this indicator within 2 time periods of the study is shown in Figure 1.

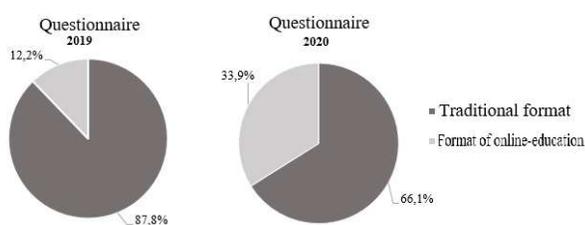


Fig. 1. Preferred training format in the 2019 and 2020 sample of subjects

An analysis of the results presented in the diagrams suggests that during the period of the distance organization of the educational process, the percentage of students preferring the online learning format has grown: in 2019, this format was chosen by 12.2% of respondents, and in 2020 - by 33.9%.

Simultaneously with the growth of the priority indicator of the online learning format, for the subjects of 2020, a positive attitude towards distance (by 2.7%), interactive (by 0.2%) and active (by 6.5%) learning technologies as the most effective in the issue of ensuring a higher quality of education. However, the results of studies in the total sample of subjects in 2019 and 2020 indicate the relevance of the traditional form of education in the assimilation of new material, which indicates the preservation of

priority for traditional technologies. Along with this statement, it is necessary to consider that there is a decrease in the value of traditional lectures, seminars, laboratory work (by 9.4%) in the 2020 study relative to the results of 2019 (Fig. 2). The number of students who believe that it is easier to study new material through online lectures, completing assignments for self-examination, passing tests has increased by 7%; the importance of self-study of an electronic course or MOOC in addition to the traditional lecture and seminar in the study of new material has also increased by 8.1%.

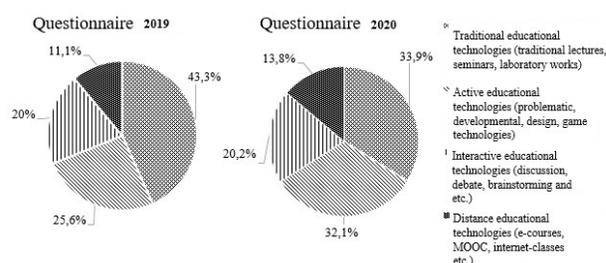


Fig.2. The relevance of pedagogical technologies in the issue of ensuring a higher quality of education in the 2019 and 2020 research.

To identify the reasons for the increasing relevance of distance learning, we asked students to identify the positive and negative aspects of online learning. Based on the results, we can draw the following conclusions:

1. Students in both 2019 and 2020 noted as an advantage of distance learning the opportunity to study at a convenient time, in a convenient place and pace (91.1%/ 88.1%, respectively). However, in 2019, additional advantages for students were the opportunity to simultaneously receive a second (third) vocational education (47.8%), as well as equal opportunities to receive education regardless of place of residence, health status, elitism and material security of the student

(38.9%). In 2020, subjects give preference to the possibility of learning in a comfortable, familiar environment (56%), combining work with study (35.8%).

2. As negative aspects of online learning in 2019 and 2020 students named a lack of communication and joint activities with other students of the group (47.8% / 50.5%, respectively) and with the teacher (62.2% / 46.8%, respectively). The 2020 study highlighted the shortcomings of online education on the problem of students' dissatisfaction with the need to acquire and consolidate knowledge in their specialty (42.2%).

The result of comparing the results of the 2019 and 2020 studies was a private conclusion that, despite the awareness of the subjects of the positive and negative aspects of distance learning, the relevance of online learning among student teachers is increasing.

Further, we set a goal to find out the popular and personally relevant trajectories of the professional development of future teachers. The priority areas within the framework of this issue, considering the ranking, are: subject teacher, teacher-educator, teacher-facilitator (tutor, mentor). Only 5.5% of the respondents consider the “digital teacher” trajectory of professional development personally relevant (Fig.3).

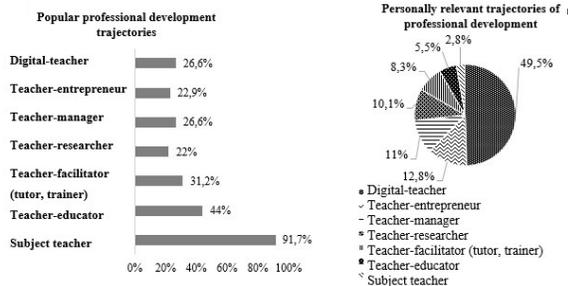


Fig. 3. Popular and personally relevant trajectories of professional development of students

Comparison of the answers of 1st and 5th year students allows us to state that the “digital teacher” trajectory is more popular among 1st year students: 35% of freshmen and 20% of 5th year students noted it as one of the three most significant. Digital pedagogy for freshmen - yesterday's eleventh graders is a more familiar and accepted reality, which they encountered already at school.

Conclusion

Correlation analysis (Pearson's symmetric correlation coefficient) made it possible to establish that the trajectory of professional development "digital teacher" has the strongest correlation with the trajectory "subject teacher" (Pearson's correlation coefficient $r = 0.572$, with a significance level of $p = 0.05$). Future teachers see their “digital” pedagogical activity primarily in the context of the process of teaching schoolchildren. Links with other professional trajectories have very low ($0,08 < |r| < 0,2$) values and are not significant.

The analysis carried out suggests that the majority of students evaluate online learning only from the point of view of the form of study at the university, without linking this format of activity with the priority professional trajectory of development. There is a tendency to shift the line of preferences of students towards the distance learning format in younger years. In general, in the modern educational process, ideas about digital pedagogy and digital pedagogy are being updated. The transition of students - future teachers to distance learning opens up a range of

new problematic issues and tasks for transforming traditional education into a digital one and replacing the "traditional" teacher with a "digital" one.

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