

## THE USE OF DIGITAL EDUCATIONAL ENVIRONMENT IN OVERCOMING TEACHER'S DIDACTIC DIFFICULTIES

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Abstract: The article notes that at the present stage of the development of the higher education system, there is a problem of training competent specialists who are able to react swiftly to emerging difficulties in professional activity, identify them and solve them promptly. According to the documents on education, the criteria for assessing the quality of a teacher are readiness to solve didactic tasks, the presence of didactic skills, abilities, etc. The authors believe that in pedagogical science there is a problem of finding ways to overcome didactic difficulties that arise in the implementation of educational and training activities of a teacher. The article presents the developed practice-oriented study assignments for students, describes the results of a pedagogical experiment.

Keywords: digital educational environment, didactic difficulties, didactic preparation, teacher, educational task.

### 1 Introduction

The increased interest in the use of the digital educational environment in education is due to the possibilities of open access to information, the organization of a system of information and communication interactions, the implementation of productive joint educational activities through the placement and constant exchange of didactic resources. In this regard, the study of the features of the use of the digital educational environment, the study of the specifics of its influence on the personal and intellectual development of the teacher, the identification of educational and developmental opportunities of the digital space in overcoming the didactic difficulties of the teacher becomes particularly relevant.

In addition, the rapid modernization of general education has led to the orientation of the teacher's activity on the personality-centered side of the student. This fact in modern education dictates the introduction of various innovative technologies in education and leads to a number of didactic difficulties for teachers in carrying out educational and training activities.

A number of researchers (Orkibi, 2012; Babanskii, 1977; Vershlovskii, 1988) note the relatively slow use of the digital educational environment in the educational process of an educational organization, since such an environment is not fully adapted to the education system and the implementation of educational and training activities in it requires special training from the teacher, and the development of the Internet is moving in the direction from technology to content. For each teacher and student, the use of the digital environment is determined by individual needs and personal experience of online activities.

The study of research and experience in the organization of the learning process with the identification of emerging didactic difficulties in the training of teachers, the use of the digital educational environment in overcoming these difficulties leads to the conclusion about their effectiveness and relevance. But at the same time, there is a number of problems associated with the low level of readiness of the teacher to overcome the emerging didactic difficulties in his educational and training activities using the digital educational environment.

### 2 Literature Review

In the course of studying and analysing the works of scientists in the field of using the digital educational environment, it was found that by now a fairly large experience has been accumulated in developing and using a teacher in such format of educational and training activities. It is reflected in the works of such scientists as B. Schneuwly, H. Vollmer (2018), Zh. A. Kasko, T. I. Shukshina (2019), etc. Most authors agree that many teachers experience certain didactic difficulties in carrying out educational and training activities using a digital educational environment.

It should be noted that such researchers as F. Ligozat, J. Almqvist (2018), R. A. DeMilo (2011) and others were engaged in the study of didactic difficulties of a teacher at different stages of the development of pedagogical science. Scientists have identified the reasons for emerging of didactic difficulties of teachers and identified some ways to overcome them (mentoring, consultations, attending demonstration lessons).

Analysis of the scientific literature on the research topic (Movsesyan & Shukshina, 2018; Babushkina et al., 2020; Buyanova et al., 2020; Shukshina et al., 2018; Benjamin, 2012; Afonina & Shukshina, 2020; Mayer, 2017; et al.) enabled to formulate a working definition of didactic difficulties of a teacher – an observed situation of educational and training activities of a future teacher, in which there is insufficient formation of the ability to solve emerging didactic tasks of building a learning process focused on activating educational activities in the classroom, developing independence, motivating learning. Thus, we consider the difficulty not as an obstacle, but as a task of practical activity, which is characterized by uncertainty of the conditions of the problem, variability of solutions due to specific contexts of its occurrence (Brockbank & McGill, 2007; Clanche, 2006; Ryzhov et al., 2020; Vershinina et al., 2020; Lijnse, 2004; Mamontova et al., 2016).

### 3 Research Methodological Framework

The purpose of the article is to consider the process of overcoming the didactic difficulties of a teacher, when some elements of the educational process are organized in a digital educational environment.

In accordance with the goal, the following research tasks were identified: to determine the possibilities of the digital educational environment and its ways of functioning in overcoming the teacher's didactic difficulties that arise; to consider the role of practice as a system-forming element aimed at the teacher's didactic training and determining specific difficulties in the implementation of educational and training activities for students in practice; to develop study assignments for a student having pedagogical practice in an educational organization.

The experiment was conducted during 2019-2021. The experimental study was carried out on the basis of the Mordovian State Pedagogical University named after M. E. Evseviev. 98 students of the Faculty of Pedagogical and Art Education, whose field of study is Pedagogical Education with the profile of Primary Education, Preschool Education and Fine Arts, took part in the experiment. Additional education is in the field of Design and Computer Graphics.

The research was carried out using theoretical (analysis of psychological and pedagogical literature, synthesis, generalization, systematization of material on the problem of training a future teacher and performing a control and evaluation function, forecasting, comparison, design) and empirical (pedagogical experiment) research methods.

#### 4 Results and Discussion

The digital educational environment functioning at the Mordovian State Pedagogical University named after M. E. Evseviev (MSPU) is an integral system characterized by universality, which provides students to master theoretical knowledge in the field of didactics more holistically, using third-party educational resources that include a logically structured educational process.

At MSPU, the digital educational environment is used by all participants of the educational process comprehensively with the inclusion of software and hardware digital tools that allow the educational process to be carried out, to record its results in the global network, to accumulate, systematize, store and implement digital didactic resources that provide the student's educational process with information materials in the field of didactics (Vinogradova, 2016; Movsesyan, 2017; Hagger & McIntyre, 2006; Verbitskii, 2010; Shukshina & Movsesyan, 2017). The system under consideration meets the challenges of the modern education system, implements the features of open continuing education, promotes the independence and initiative of the student (Eynon, 2002; Rahman, 2012; Shukshina & Kasko, 2019).

The digital educational environment of MSPU is quite diverse and multifaceted, consisting of several elements. It includes:

1. the automated system "INFO-UNIVERSITY", with the help of which the student has the opportunity to view the latest news, as well as find samples of documents and clarify the schedule of training sessions;
2. the distance learning system "Moodle", in which online learning interaction between teachers and students is organized. From the student's page, access is provided to various documents characterizing the chosen direction and profile of training: the major professional academic program (MPAP), the curriculum, work programs of disciplines and practices, the program of the state final certification, methodological materials. In addition, the student has the opportunity to view the list of training courses in each semester, personal files within each individual course and personal messages (Kurennaya, 2012; Guerriero, 2017; Pramling, 2008; Black, 1998; Brunnet & Portugal, 2016);
3. the student's personal account, where it is possible to view their progress in specific academic disciplines and modules;
4. the service "MSPU 24", where the student presents a list of his own achievements in educational, scientific, sports, cultural, creative and other types of activities;
5. platforms of electronic library systems, where the student has access to any textbook or textbook available in the library (electronic library systems "MSPU", "Urait", "University Library online", "Lan").

In accordance with the first task of the study, we have identified the possibilities of the digital educational environment in overcoming the emerging didactic difficulties of the teacher on the basis of the educational system "Moodle". This educational system enables all participants of the educational process to get access to the didactic materials of any educational course of the university, regardless of its location. The teacher, at the same time, is endowed with separate functions, and can control the educational process remotely. At the same time, the remote format of educational process management, we characterize as the availability of the studied didactic material at any point of the student's location. This allows all participants of the educational process to get individual access to a personal page necessary for viewing the offered training courses and its didactic materials.

The main media content of the considered Mordovian State Pedagogical University named after M. E. Evseviev environment is training courses. The main elements of each course are a set of didactic materials presented in the form of objects of the Moodle learning environment: resources and interactive elements of the course. Using the example of the discipline "Pedagogical Practice", we will show a way to overcome the didactic

difficulties of a teacher by performing a set of developed educational tasks.

To get access to the course, the student must click on the link "Home page", in the drop-down list select the desired MPAP, level of education, field of study, profile, form of study, course of study, academic course. After choosing an academic course, the system will offer enrolment, after which the student will have access to the didactic materials of the course. The course materials can be lecture texts, hyperlinks to online lectures, online consultations, online classes, a set of training tasks and much more. Completing academic assignments, the platform allows the student and the teacher to save the students' works, reviews and ratings for these works, comments and reviews in the form of comments.

The system also makes it possible to interact between the participants of the educational process. This is done through asynchronous interaction (instant messaging).

As part of the second task of the study, we have considered the role of practice as one of the system-forming elements aimed at its didactic preparation and at identifying specific difficulties in the implementation of educational and training activities by a teacher in practice.

Pedagogical practice also provides a synthesis of didactic knowledge and practical experience. Acquisition of didactic activity and formation of readiness for it are possible only if the didactic difficulties that arise are successfully overcome, which are interdependent on theory and practice in the didactic training of a teacher, since most of the components of skills and abilities in the field of didactics cannot be formed, limited to classroom classes.

It should be noted that pedagogical practice at Mordovian State Pedagogical University named after M. E. Evseviev occupies a central place in training students to solve emerging didactic difficulties in the process of implementing educational and training activities. As a rule, educational organizations of not only the Republic of Mordovia, but also neighbouring subjects of the Volga Federal District are the bases for having pedagogical practice.

Solving the third task of the study, we will give examples of developed educational tasks for students who are in pedagogical practice in an educational organization. It should be recalled that the didactic interaction between the teacher and the student was also carried out in the educational environment "Moodle", which is actively used in the Mordovian State Pedagogical University named after M. E. Evseviev for the implementation of the educational process.

1. Select which tasks the teacher-mentor uses in the lesson (according to your profile).
2. Formulate tasks for one of the types of universal educational actions formed in the lesson, in accordance with your profile.
3. Analyse the content of the textbook (according to your profile), which is used by a teacher-mentor in a specific educational environment in terms of its personal orientation, activity component and creative orientation. Formalize the results in the form of a table. Draw conclusions.
4. Get acquainted with the content of the school's curriculum. Analyse the list of subjects studied for one academic year; is there a division of the list of subjects by year of study, as well as a division of academic courses into mandatory and additional ones?
5. On the basis of theoretical materials, determine the main requirements for the organization of the educational process of children with special educational needs.
6. Develop an approximate structure of the lesson using interactive technologies.
7. Present the intermediate results of the diagnosis by the teacher-mentor of the formation of universal educational actions in students.

8. Suggest options for using health-saving technologies in the lesson (in accordance with the selected profile).

The content of the developed educational tasks is correlated with the lecture material on didactics about the peculiarities of the teacher's didactic difficulties, their discussion and verification is carried out in practical classes, and the search for ways to overcome the didactic difficulties that arise, as a rule, is carried out during the training session. The reporting documentation on the results of the pedagogical practice and the presentation of the completed educational tasks are provided to the teacher in the form of a portfolio, accompanied by photo and video materials.

Based on the results of the experimental work carried out, we identified that the implementation of the educational process in the digital educational environment contributed to serious changes – students, to a greater extent, identify didactic difficulties in organizing the educational process, quickly and successfully find ways to solve emerging difficulties. This indicates the effectiveness of the work carried out in terms of increasing the level of didactic training of the teacher. These conclusions are supported by the comparative results of the study conducted by us on the basis of the Moscow State Pedagogical University. Students of the 3rd year of the Faculty of Pedagogical and Art Education took part in it. The data indicate a positive dynamics of the work carried out: before the experiment, the ability to isolate, adequately and promptly find ways to overcome the emerging didactic difficulties was at a low level (36%), and after the work had been done, its level increased to 54%.

## 5 Conclusion

The conducted research allows us to draw the following conclusions:

In modern conditions, the search for ways to overcome the teacher's didactic difficulties that arise, their prompt identification in the course of the educational process is possible using digital information and educational environment saturated with dynamically changing and improving digital content.

Pedagogical practice at the MSPU occupies a central place in the teachers' training to solve the emerging didactic difficulties in the process of implementing educational and training activities

One of the means of overcoming the emerging didactic difficulties of a teacher in the digital educational environment is competently developed practice-oriented training tasks in the academic course "Pedagogy", which a student can perform during the period of having pedagogical practice, thereby solving specific didactic difficulties in his educational and training activities.

So, as a result of the conducted research, we can say that in modern conditions, the search for ways to overcome the emerging didactic difficulties of the teacher, their prompt identification in the course of the educational process is possible using digital information and educational environment saturated with dynamically changing and improving digital content.

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