

Opportunities of Digital Educational Environment in the Assessment of Practical Training of Future Teachers

Marina Zakharova¹, Irina Karpacheva², Elina Voishcheva²

¹ Associate Professor, PhD, Head of Department of Pedagogy and Educational Technologies

² Associate Professor, PhD, Department of Pedagogy and Educational Technologies

Bunin Yelets State University, Russia

Abstract- The article presents the development and testing of a database that includes practice-oriented tasks for the implementation of practical training of future teachers in the process of lectures, practical and seminar classes in pedagogy. Practical training is considered as a form of organization of educational activities in the mastering of the educational program in the conditions of performance by students of certain types of work related to future professional activities and aimed at the formation, consolidation, development of practical skills and competencies in the profile of the educational program. Practical training of the future teacher in the conditions of digitalization of education is presented in the unity of components (target, methodological, content and procedural) and stages (general didactic and methodological). The experimental work was carried out on the basis of Bunin Yelets State University (Russia) in 2022 - 2023. Specially organized interaction covered 96 students of the 2nd year. As part of the study of the discipline "Pedagogy" students were offered to perform practice-oriented tasks from the database in the digital educational environment. The results of the study made it possible to identify successful areas of work and areas that require further improvement of practical training as part of further methodological training.

Keywords: future teacher, electronic database, practice-oriented tasks, practical teacher training.

Introduction.

Currently, the requirements for teacher training are clearly regulated by the federal state standards of general education and professional teacher standards. The documents developed from the point of view of the activity approach have actualized the issues of practical training of future teachers, which caused the problem of identifying the optimal ratio and integration of theoretical and practical training of future teachers in higher education in the conditions of digitalization of education.

The relevance of the problem is determined by several circumstances:

- society's need to create the necessary conditions for the development of the digital economy, and thus in a qualified, creative, competitive teacher capable of achieving high quality education;
- the change of the educational paradigm with the help of digital technologies, which have an integral opportunity to realize human abilities;
- the formation of humanistic paradigm in teacher education, the growing understanding of the role of professional and personal development of the teacher, contributing to the organic combination of professional and personal changes that influence each other, in the course of which there are transformations of roles and statuses of the individual.

Actualization of the problems is justified by the following contradictions between:

- The need of the modern education system in a successful teacher with the achievements of modern science, professional competencies, personal maturity, competitiveness and the level of his/her professional readiness to work in new conditions;
- the social need to involve teachers in the digital environment and the paradigmatic conservatism of the education system;

- between the need for continuous professional and personal self-development to ensure the success of professional activity and the inertness of the established system of modern education.

Currently, Russia is implementing a number of initiatives aimed at creating the necessary conditions for the development of informatization and digitalization of education. When immersed in the digital environment, the future specialist has a whole range of new goals, motives, needs, attitudes, competencies, as well as forms of professional and social activity. The digital environment has a huge educational and developmental potential.

The problem of digitalization of education is presented not only in domestic studies, but is also raised in foreign scientific sources.

The digital learning environment in the university promotes the distribution of educational resources, facilitates the establishment of communication between teachers and students, facilitates the management of educational quality in learning, and provides opportunities for students to attend distance learning courses (Chai, Link Koh, Tsai, Lee Wai Tan, 2011).

With the introduction of information learning technologies using lectures, online chats, discussion boards and social networks, blended learning is taking root in higher education as a norm to improve the effect of using digital environment to better engage students in the educational process (Sanchez, Salinas, Contreras, Meyer, 2011).

In modern Russian scientific research there is also ambiguity in the definition of the term "digital educational environment of the university". N.B. Kushcheeva, V.I. Terekhova consider the digital educational environment of the university as a field of interaction of educational systems, as a set of information and traditional means that realize the educational process (Kushcheeva, Terekhova, 2018).

We find a similar definition in N.P. Kleinosova and S.I. Tormasin, who define the digital educational environment as a system created for the purpose of effective implementation of the learning process (Kleynosova, 2017; Tormasin, 2017).

We find a slightly different approach to the interpretation of the concept in A.A. Andreev, who includes in the composition of the digital educational environment of the university information and technical means, application programs, printed sources, as well as software products on the basis of which the administrative and financial and economic activities of an educational institution are carried out (Andreev, 2004).

A.V. Lubkov connects digitalization of education with complex changes in infrastructural, managerial, behavioral, cultural character, as well as changes in the communication paradigm (Lubkov, 2019).

The analysis of foreign and domestic studies of the category "digital educational environment of the university" allowed us to consider this concept as a meaningful reality, an open integrity of information systems and information technology infrastructure, where educational, informational, communicative, technological capabilities designed to ensure various tasks objectively coexist.

The Federal Law of the Russian Federation No. 273-FZ defines practical training as "a form of organization of educational activities in mastering an educational program in the conditions of performance by students of certain types of work related to future professional activities and aimed at the formation, consolidation, development of practical skills and competence in the profile of the relevant educational program" (Federal Law "On Education in the Russian Federation", article 2, paragraph 24). According to the current normative acts, practical training of future teachers is carried out not only in the process of academic and industrial practices, but also in the process of studying subjects, courses, disciplines in classes of various organizational forms: in separate lecture-type classes, practical classes, workshops, laboratory classes, in the course of independent work, providing for the direct performance by students of certain types of work related to future teaching activity (Order of the Ministry of Science and Higher Education of the Russian Federation No. 885/390 "On practical training").

The problem of practical training of physical education teacher is presented in the works of both foreign and domestic scientists. The diversity of scientific views reflects a wide range of problems and the need to find their optimal solutions. In the concepts of foreign researchers, considerable attention is paid to determining the content and technology of practice-oriented teacher training (Gunter, Reeves, 2017).

In the studies of Russian scientists, the essence of practical training is considered in the context of developing optimal models for implementing educational programs (Adolf, 2021; Bakulin, 2020; Cherkasov, Cherkasova, 2021). Some works actualize the issues of practice-oriented teacher training in the conditions of network

interaction of educational institutions (Fedotova, 2022). E.I. Kazakova's study points out that the intensification of practice-oriented teacher training in the conditions of digitalization of education is focused on the achievement of new educational results that allow mastering professional competencies and labor functions (Kazakova, Tarkhanova, 2018).

Practical training in pedagogy is of special importance in the structure of physical education teacher training. The study of pedagogical disciplines is usually preceded by educational and industrial practice and therefore is the first stage of general didactic practical training.

The general didactic aspect of practical training of future physical education teacher in the conditions of digitalization of education can be presented in the unity of the following components: target, methodological, content and procedural. The target is aimed at achieving educational results, consisting in the ability of future teachers to perform labor functions in accordance with federal state educational standards, professional standard of a teacher, to solve professional tasks, including in the conditions of digital educational environment.

The methodological block includes the main provisions of modern pedagogy of higher education, revealing the content and ways of formation of professional skills; scientific approaches (system-activity, competence, personality-oriented, practice-oriented) and principles (continuity, connection between theory and practice, action-oriented and process-oriented learning).

The content component is presented to us in the unity of general didactic and methodological blocks and covers a set of knowledge, skills and practical skills of future teachers to design and implement the educational process in a modern school.

The procedural component is represented by modern educational technologies (problem-based learning, professional trials, case-tasks, digital technologies and tools).

Objectives.

The purpose of the study is to develop and approve a database including practice-oriented tasks for the implementation of practical training of future teachers of physical education in the process of lectures, practical and seminar classes on pedagogy.

Methods.

The experimental work was carried out on the basis of Bunin Yelets State University (Russia) in 2022-2023. Specially organized interaction covered 96 students of the 2nd year. In the process of studying the discipline "Pedagogy" (section "Didactics") the electronic database "Practical training in pedagogy: didactics" was used (database registration certificate № 2022620972), including practice-oriented tasks performed by students during the academic half-year as a semester assignment.

The database management system allows constructing various individual sets of practical tasks in the amount of 20 units. The assignments are presented in the test program at <https://onlinetestpad.com/7jt3p5r2i76qa>. Examples of assignments are presented below:

- Having chosen one of the topics of the profile subject (physical education, specify the class), develop 1-2 test tasks of different types. Organize the result in the form of a test;
- On one of the sites that unite professional community of physical education teachers, choose a lesson outline of learning new material on the subject of your training profile. Indicate what methods are used by the teacher at the stage of knowledge actualization, at the stage of explanation of new material, at the stage of primary consolidation, at the stage of generalization and application. Give a characteristic of one of the methods used. Evaluate the appropriateness of its use at a certain stage on a five-point scale. Suggest an alternative teaching method for each stage;
- On one of the sites that unites the professional community of physical education teachers, choose a combined type lesson outline for the subject of your training profile. Indicate what means are used by the teacher at different stages of the lesson. Give a characteristic of the used means. Evaluate the appropriateness of its use at this stage on a five-point scale. Suggest an alternative teaching tool.

Content-wise, we grouped the tasks in accordance with their orientation to the formation of five practical skills, which we consider as criteria for evaluating the practical training of future physical education teachers in the process of studying pedagogy:

1. to plan the educational process in accordance with the main educational program;

2. to design training sessions based on the achievements in the field of pedagogical and psychological sciences, age physiology and school hygiene, as well as modern information technologies and teaching methods;
3. develop problem-based learning, link learning to practice, and take into account current trends of our time;
4. use modern methods of assessment in the conditions of information and communication technologies;
5. master the basics of working with text editors, multimedia equipment.

Results.

Practice-oriented tasks from the database in the amount of 20 tasks were offered to the group twice: before and after purposeful work on the implementation of practice-oriented tasks during the study of pedagogy. Depending on the number of completed tasks, we stated one of the following levels of practical training: unacceptable (less than 10), low (10-14), average (15-17), high (18 and more).

The comparative results of the assessment of practical training of future physical education teachers in the process of studying pedagogy are presented in Diagrams 1 and 2.

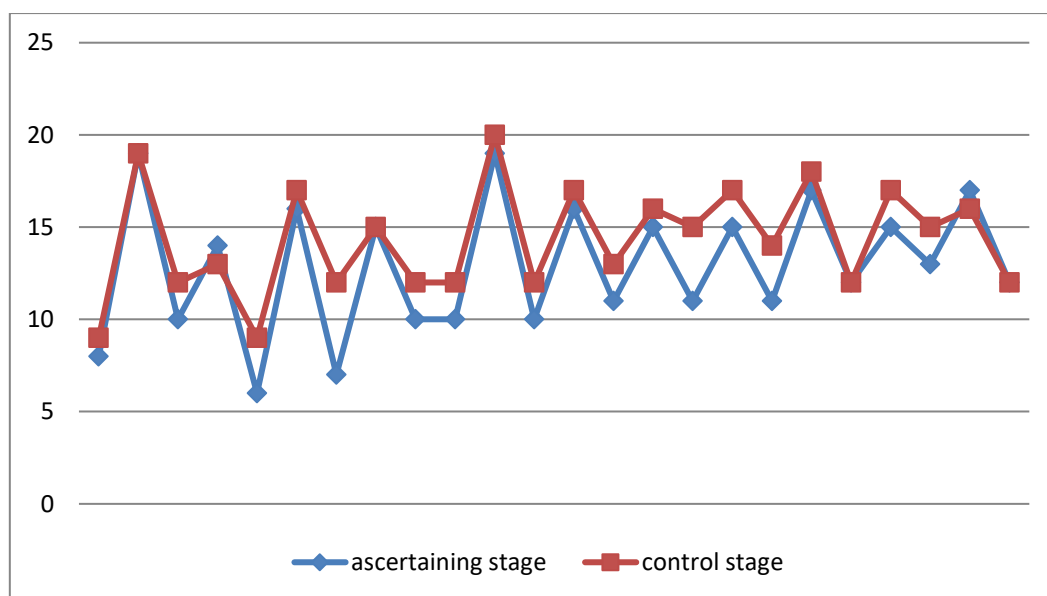


Diagram 1. Assessment of practical training: individual aspect (by number of completed tasks)

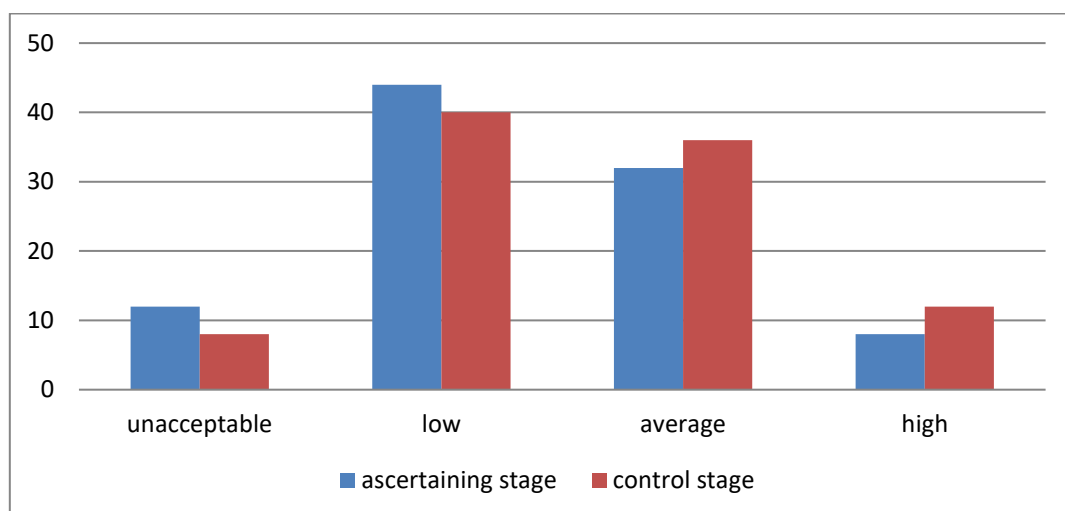


Diagram 2. Assessment of practical training: level aspect (persons)

Discussion.

Statistical evaluation of the experimental results was carried out using the Wilcoxon test for two related samples, in two different conditions: before and after the use of practice-oriented tasks. We assume that a typical shift will be a shift in the most frequent direction and formulate the H_0 -hypothesis as follows: the intensity of shifts in the typical direction exceeds the intensity in the atypical direction. The calculations show that $T_{\text{emp}}=17$. When $n=24$ $T_{kr}(0.01)=69$, $T_{kr}(0.05)=91$. $T_{\text{emp}} < T_{kr}(0.01)$ and falls within the zone of significance. That is, the H_0 -hypothesis is confirmed. The results obtained during the experimental work are statistically significant.

The qualitative analysis of the results of the experimental work allows us to state that students have a good command of the skills of planning the educational process, mastery of presentation techniques, and the ability to use modern methods of assessment in the conditions of information and communication technologies. We define further directions of practical training of future teachers: the development of skills to conduct training sessions based on the achievements in the field of pedagogical and psychological sciences, age physiology and school hygiene, as well as modern information technologies and teaching methods; skills to develop and implement problem-based learning, to link learning with practice, to take into account the current trends of our time.

Further implementation of practical training at the second - methodological - stage during the study of methodological disciplines will allow future teachers to be creative in performing practice-oriented tasks and solving professional problems in real conditions.

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