Interactive technologies as a means of pedagogical training for future physical education teachers

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Abstract

Objective of the study is to develop professional competencies in future physical education teachers through digital educational content and interactive technologies.

Methods and structure of the study. The databases 'Practical Training in Pedagogy: Didactics' and 'Practical Training in Pedagogy: Theory and Methods of Education' served as educational content for the development of practice-oriented case studies. Immersion in the interactive environment was achieved through group defence of the completed case studies. The research base was the I.A. Bunin Yelets State University (Lipetsk Oblast).

Results and conclusions. Diagnostic work was carried out in the discipline of 'Pedagogy.' According to the results, the majority (44%) of students are at an average level of professional competence. During interactive problem-solving and group case studies, future physical education teachers master the solution of pedagogical-type tasks in their professional activities.

Keywords: *physical education teacher, interactive technologies, pedagogical training.*

Introduction. Modern education in Russia cannot be imagined without the introduction of new educational technologies, including interactive and digital ones, into the learning process. Research on the effectiveness of conditions created in universities for the application of modern interactive technologies is being conducted by foreign and domestic scientists [1, 2, 6, 7, 13].

We consider the practical training of future specialists to be a form of educational activity 'in which students perform certain types of work related to their future professional activities and aimed at forming, consolidating, and developing practical skills and competencies in line with the relevant educational programme.'

In our opinion, the effective condition for ensuring the practical training of future teachers is the active use of interactive technologies in the educational process.

According to V.K. Dyachenko, interactive learning is a method of cognition based on dialogue-based forms of interaction between participants in the educational process, as a result of which students develop teamwork skills and a dynamic is created in which 'everyone teaches everyone, and everyone teaches everyone' [4].

The introduction of interactive technologies into the training of specialists frees the teacher from reproductive functions, but actualises creative ones, changes the role of the teacher, and expands the possibilities for managing the cognitive activity of students. Figure 1 shows our proposed algorithm for the formation of professional competencies of future teachers based on the use of interactive technologies.

A necessary condition for the formation of professional competencies of future teachers is meaningful goal setting, perception of information, and designing options for solving professional tasks of future pedagogical activity while immersed in an interactive learning environment.

In modern educational practice in a digital society, interactive learning is closely linked to the use of in-

formation technologies, the research and implementation of which continues in a number of areas: development and application in the educational process; development of information and communication technologies [1, 3, 5, 8, 9, 11].

Objective of the study is to develop professional competencies in future physical education teachers through digital educational content and interactive technologies.

Methods and structure of the study. The research base is the Federal State Budgetary Educational Institution of Higher Education 'Yelets State University named after I.A. Bunin' (Lipetsk Oblast). Twenty-five people participated in the experimental group – students majoring in 44.03.05 Pedagogical Education (with two specialisations), specialisation (profile) Physical Culture, Additional Education (sports training).

The professional competence to be developed was selected from the main educational programme of the university for this profile, PKS-1, which is capable of teaching the subject based on the use of subject-specific methods and modern educational technologies that ensure the achievement of meta-subject, subject-specific and personal results.

The indicators of competence achievement, reflecting general pedagogical training, are presented as follows: know – the characteristics of personal, meta-subject and subject results of students in the context of physical education (in accordance with the Federal State Educational Standards and the approximate curriculum), methods of control, assessment and correction of learning outcomes; be able to – design a working programme for the discipline, design and implement various forms of teaching and organisation of extracurricular activities for students in physical education, ensuring the achievement of meta-subject, subject and personal results; be proficient in modern educational technologies that ensure the achievement of meta-subject, subject and personal results of students, methods of monitoring, assessment and correction of learning outcomes.

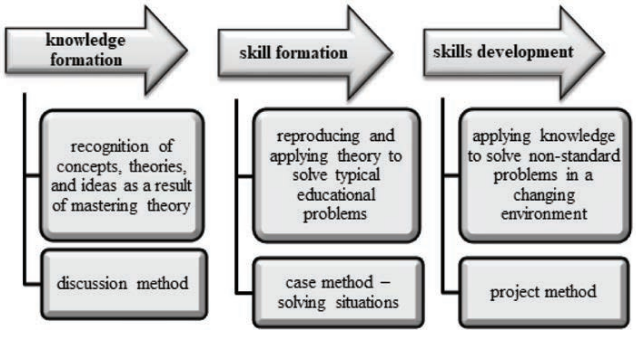

Figure 1. Algorithm for developing the professional competencies of future teachers based on the use of interactive technologies

The databases 'Practical Training in Pedagogy: Didactics' and 'Practical Training in Pedagogy: Theory and Methods of Education' served as educational content for the formation of individual practice-oriented cases requiring solutions (OIS registration certificates No. 2022620972 and No. 2023621215, respectively). Here is an example of a case: Based on the text of the Federal State Educational Standards (clause 10, section II), visualise the requirements for meta-subject learning outcomes in physical education. The result of the case study solution could be a sketch of a stand, an organisational chart, a fragment of a working programme for the discipline, etc. Immersion in the interactive environment was achieved through group defence of the solved case studies.

Results of the study and discussion. Assessment materials for this competency in the subject 'Pedagogy' (4th semester of study) were used as diagnostic materials to evaluate the development of professional competence. The diagnostic work was carried out in accordance with the requirements of the Russian Accreditation Agency for diagnostic work during state accreditation. The 'satisfactory' grade received by future physical education teachers for completing the diagnostic work was classified by us as a low level of competence development, "good" as average, and 'excellent' as high. The results obtained are presented below (Figure 2).

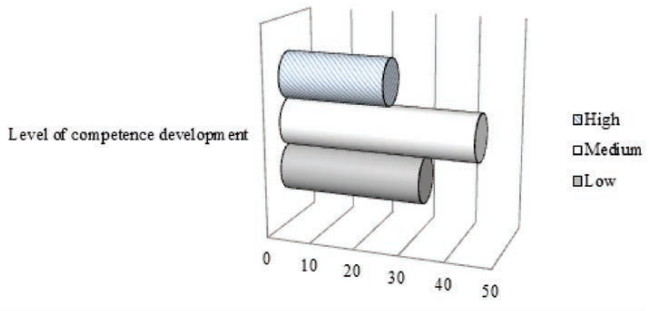

Figure 2. Assessment of PCS-1 formation: level aspect (%, sample p = 25)

In our opinion, the results obtained correspond to the logic of professional competence formation throughout the entire training process. Most students are at an intermediate level of PKS-1 development.

Further assimilation of methodological knowledge in senior courses and industrial practice will enable future teachers to master professional competencies at a high level, which corresponds to the transition from the zone of proximal development to the zone of actual professional development.

During interactive problem solving and group case studies, students master the pedagogical tasks of their future professional activities: they learn about regulatory and legal acts in the field of education and professional ethics; they gain initial experience in developing elements of basic and additional educational programmes; they design possible joint and individual educational and training activities for students; master the skills of control and evaluation activities, etc.

Conclusions. The didactic essence of interactive technologies used in the educational process of a university lies in the creation of organisational and managerial information support for the educational process, including innovative methods, forms of organisation of educational activities and control of their results.

The system of didactic conditions that ensure the effective use of interactive technologies in the training of future physical education teachers includes the creation of conditions that allow for the organisation of: the recognition of concepts, theories, and ideas as a result of mastering theory, the reproduction and application of theory to solve typical educational problems, and the application of knowledge to solve non-standard problems in a changing environment.

A learning model based on interactive technologies in an electronic information and communication environment provides an opportunity to integrate students' independent cognitive activity with a variety of information sources and specially designed teaching materials, ensuring prompt and systematic interaction with teachers and fellow students, as well as promoting effective collaborative learning using a wide variety of problem-based and research-based teaching methods in the course modules.

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