The University digital educational environment potential in the future teacher professional and personal development

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Abstract. The transition to digital education is associated with economic, political changes in society, as well as with changes in infrastructural, communicative, and cultural nature. The University digital educational environment role in a professional and personal development system is being updated. The “professional and personal development a future teacher” scientific and theoretical analysis concept made it possible to consider professional and personal development as a becoming a teacher dynamic process, which entails the subject inner essence transformation through the interaction of self-improvement motivation, professional orientation and competence, creativity, personality traits and activities. This study purpose was to study different approaches to understanding this category, disclosing its essence and structure, establishing the basic requirements for its organization. The main research question was in which case the digital educational environment provides professional and personal development, competitiveness formation, communicative equality, the future teacher social experience interactivity. The leading methods in the research were: theoretical and methodological analysis, scientific research interdisciplinary analysis, system analysis, pedagogical interpretation method, comparison, generalization, concretization; experience in organizing multi-level education study, questionnaires, testing. It is shown that a teacher at a university professional and personal development effectiveness largely depends on the students, teachers, the digital educational environment and various conditions' optimal interaction.

1. Introduction

The scientists actively increasing interest in the professional and personal development problem is justified by the educational simulacra in higher education presence, educational results insufficient quality control, low communication interactivity, and competencies vulgarization.

The relationship problem between the digital environment, education and professional and personal development are one of the most complex, controversial and contradictory in modern pedagogical science [1-2].

This study purpose was to study different approaches to understanding the university digital educational environment category, disclosing its essence and structure, establishing the basic requirements for its organization for the effective impact on the future teacher professional and personal development.

The main research question was in which case the digital educational environment provides professional and personal development, competitiveness, communicative equality, the future teacher's social exchange interactivity.
A teacher professional and personal development problem at the university is reflected in the domestic and foreign scientists works (A A Derkach, N Yu Karakozova, N V Kuzmina, A K Markova, L M N Resheten, A Maslow, E Shostrom and others).

In the research of V A Bodrov, T Yu Gvildis, E I Isaev, M E Kudryavtseva, N V Kuzmina, A M Markova, L M Mitina, A V Morozov, F V Okereshko, V V Serikov, V I Slobodehikov, I V Shapovalova it is stated that a teacher professional and personal development is not only a developing an appropriate knowledge base and skills necessary for teachers to effectively perform their roles process, but also their own inner world active qualitative transformation.

From a philosophical point of view, personality is considered in the social qualities' context, is a dynamic, active, integral system, plastic education (B G Ananiev [3], I V Vasyutenkova [4], V M Rozin [5]).

The professional and personal development goal is to help the future teacher learn to accommodate his development to his students' needs [4, 6]. Effective professional and personal development should encourage teachers to experiment with new ideas, innovations in pedagogical activity, reflect on how innovations affect education, their students' development, and contribute to their goals' achievement [7; 8].

From E.F. Zeera point of view, about, self-development, self-improvement, self-realization, self-actualization, professional orientation, professional-pedagogical competences, professionally important and socially significant personality traits are designated as the concept under consideration fundamental components [9].

A teacher professional and personal development mean mastering personal and professional virtues and qualities, achieving their unity through the necessary life goals development that help the teacher understand his activities and himself as a person [10].

The “teacher's self” development is crucial for improving the education quality, therefore, development should be aimed at personal, professional and social aspects [11, 12].

A teacher's professional and personal development necessary elements are constant reflection, their own pedagogical activity analysis and assessment [13], since they can help him build new teaching theories.

A teacher professional and personal development category analysis made it possible to single out the following research areas: content (psychological development and pedagogical theories and models), dynamic (a personality professional formation within the age) and institutional (development in various educational institutions).

The concept under study Scientific and theoretical analysis makes it possible to consider professional and personal development as a becoming a teacher dynamic process, which entails the subject internal essence transformation through the self-improvement motivation interaction, professional orientation and competence, creativity, personality qualities and activities.

A modern teacher professional and personal development take place in the education digitalization context. In this regard, the issues of forming a competitive, successful professional in the digital space become relevant.

When immersed in the digital environment, a future specialist has a whole range of new goals, motives, needs, attitudes, competencies, as well as professional and social activity forms. The digital environment carries a huge educational and developmental potential.

The education digitalization problem is presented not only in domestic studies but also raised in foreign scientific sources. The digital environment in a higher education institution is a learning ecosystem that integrates digital technologies with teaching and learning practices as an important educational innovation by promoting technology platforms [14, 15].

The digital educational environment at the university promotes the educational resources' distribution, facilitates the communication establishment between teachers and students, facilitates the education quality management in teaching and provides an opportunity for students to attend distance learning courses. The digital environment in higher education improves the life quality and professional experience and learning outcomes by providing adaptive materials and strategies to meet individual
learners needs and preferences [16]. With the information technologies introduction for teaching using lectures, online chats, discussion platforms and social networks, blended learning is taking root in higher education as the norm to improve the using of the digital environment effect in order to more actively involve students in the educational process.

In modern Russian scientific research, there is also ambiguity in "the university digital educational environment term" definition.

N.B. Kushcheva, V.I. Terekhov, the university digital educational environment are considered as an educational systems' interaction field, as information and traditional means set that implement the educational process [17]. We find a similar definition in N.P. Kleinosova [18], A.S. Gear [19].

I.M. Osmolovskaya, Yu.E. Shabalin describe the university digital educational environment through the information and technical, educational and methodological tools complexity to provide various tasks [20].

We find a somewhat different approach to the concept interpretation by A.A. Andreev, who includes software products for an educational institution in the digital educational environment administrative, financial and economic activities [21].

A V Lubkov connects the education digitalization with complex changes in the communication paradigm [22].

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

Comparing the above points of view on the concept regarding its essence, we will try to clarify the digital educational environment structure. In our opinion, its elements are educational-methodical, informational, research, organizational, learning outcomes control and assessment, technological, extracurricular and administrative components.

In general, it can be argued that the university digital environment performs a number of functions:

- informational, including accumulation, production, information transmission and storage, knowledge rapid updating, the control system improvement;
- educational, aimed at familiarizing with certain types of educational activities, self-education and self-development, including not only the assimilation of scientific knowledge but also the formation of universal ways of activity, including future professional;
- communicative, closely related to the informational, involving the interpersonal communication students' methods mastery, connections creation between the educational process subjects;
- social, which is aimed at mastering the values of society, attitudes, cyberspace social comprehension processes, their own position formation.

2. Methods
The study methodological basis was the personality and its development theory modern psychological and philosophical provisions. Of particular importance for our work were the environmental approach provisions, which would be focused "not only on the object world of objects but also on the development of the world of communications, connections and relationships between educational systems, associations (associations) of educational institutions and their educational environments into a single communicative cultural environment ".

The theoretical methods indicated in the annotation made it possible to reveal "a teacher professional and personal development" concepts essence and "digital educational environment", practical methods - to establish their interdependence. Empirical and research was conducted on the basis of Yelets State University named after I A Bunin in the 2019-2020 academic year. The subjects’ total number was 96 students 1 and 2 courses, receiving education in the training areas: 44.03.01 Pedagogical education, 44.03.05 Pedagogical education (with two training profiles). The sample was random.
The students professional and personal development level was measured: questionnaire by K M Levitan "Future teacher professional activity self-assessment", O I Motkov personality self-assessment, adapted by us to our study.

At the experiment formative stage, students were immersed in interactive interaction, research and search work, contributing to the introduction to the older generations traditions; participated together with a teachers team in pedagogical work, in which process the school traditions were assimilated. Were developed creative tasks, research and teaching and methodological and didactic materials, introduced into the university digital educational environment.

During the experiment, students carried out individual and group projects, presented them to the fellow students' creative expertise and tested them in the pedagogical practice course, were participants in scientific and practical conferences at different levels, various competitions, actions.

3. Research results and discussion

The generalized study results are presented in table 1.

| Level           | Before the pedagogical conditions' implementation | After the pedagogical conditions' implementation |
|-----------------|-----------------------------------------------|-----------------------------------------------|
| Invalid         | 13.9%                                         | 3.2%                                           |
| Low             | 32.0%                                         | 8.9%                                           |
| Average         | 31.7%                                         | 41.3%                                         |
| Above average   | 17.8%                                         | 28.7%                                         |
| High            | 4.6%                                          | 17.9%                                         |

For the future teacher professional and personal development successful implementation, we have created pedagogical conditions.

One of the most important conditions for is a digital educational environment that provides learning process informatization, subject-subject relations between participants in the educational process, and each student involvement in joint cooperation. As S D Karakozov, R S Suleimanov, A Yu Uvarov, the digital educational environment is "technological infrastructure, information resources (which are available through the appropriate automated information systems), digital tools for educational work and its participants organizing the interaction" means [23, p 69]. It allows organizing online access to digital tools, educational, methodological and reference literature, educational process subjects interaction, professional and personal development management, to form a willingness to research work, basic competencies and personal qualities.

A V Morozov considers the digital educational environment as "a digital educational resource, tools and technologies set that ensure the educational process in the digitalization context" [24, p 106].

To another pedagogical condition, we referred to student's creative activity stimulation using interactive technologies. "Creative activity is a tool for a personality creative development, which is a university educational environment is carried out in a number of areas: project training, an individual professional creative style formation, research out-of-class activities, modelling professional activities" [25, p 103].

Encouraging students to reflexive activity in the university educational process is another pedagogical condition. A future teacher identifies himself with the pedagogical interaction content, with a certain pedagogical situation, with fellow students, with activity different models and information technologies. Reflexive activity presupposes mutual evaluation and the participants' mutual reflection in the educational process, interaction and performs a number of functions: diagnostic, design, analytical, communicative, organizational, meaning-making, motivational, and correctional. The reflexive activity ensures the professional and the future teacher personal growth, the certain practical experience accumulation and its interpretation, the beliefs and world view, value orientations gradual formation.
The next prerequisite is the multilevel cultivation and multidimensional interaction between students and teachers. With such interaction, feedback, a positive climate, assigned tasks joint solution favourable atmosphere are established, which contributes to the students' social activity development and their professional and personal development.

It should be noted that it is the multilevel, multilateral and multidimensional interaction in the university educational process that contributes to a methodological culture formation, future teachers key competencies and abilities, their readiness for self-education, self-improvement, self-development, self-actualization, reflection.

4. Conclusions
The practical experience made it possible to determine the university digital educational environment pedagogical capabilities as a resource for future teacher professional and personal development:

- the incentives' formation for self-improvement, self-realization in future professional activities, the ability to work creatively, taking into account each student individual characteristics;
- organization of an interaction and cooperation common field for all participants in educational relations;
- conditions purposeful creation for the development, the student education, the self-formation through group communication, group experience, the students' inclusion in versatile social relations;
- information and communication services provision, digital tools, self-government development, initiative and independence of participants in the educational process, various educational associations' creation.

The conducted research results analysis suggests that the work success on professional and personal development largely depends on the optimal interaction of students, teachers, the digital educational environment and various conditions that actively influence their development.

A future teacher professional and personal development process can be optimized through a value attitude formation towards self-transformation activities, the personal parameters pairing organization with the functional structure, personal individuality, the intensive methods and digital technologies use.

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