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## **PEDAGOGICAL TRAINING OF FUTURE TEACHERS IN THE CONDITIONS OF INFORMATIONAL AND EDUCATIONAL ENVIRONMENT OF THE UNIVERSITIES OF UKRAINE**

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**Abstract.** The article reveals main directions and factors of the formation of informational and educational environment of a higher educational institution. One of the most promising means of creating and updating the database of educational and methodological materials are assumed to be cloud technologies (HT). Theoretical and methodical principles of pedagogical training of teachers in the conditions of informational and educational environment of a HEI are substantiated. There have been unfolded main directions and factors of the university's informational and educational environment formation. The system model of pedagogical training of teachers is developed in the conditions of informational and educational environment containing the following blocks: conceptual-content, organizational-technological; diagnostic and productive.

**Key words:** teacher training, elementary school, informational technology, cloud technologies, informational and educational environment.

## **FORMARE PEDAGOGICĂ A VIITORILOR PROFESORI ÎN CONDIȚIILE MEDIULUI INFORMATIV ȘI EDUCAȚIONAL AL UNIVERSITĂȚILOR DIN UCRAINA**

**Rezumat.** Articolul dezvăluie principalele direcții și factori ai formării mediului informațional și educațional al unei instituții de învățământ superior. Unul dintre cele mai promițătoare mijloace de creare și actualizare a bazei de date a materialelor educaționale și metodologice se presupune a fi tehnologii cloud (HT). Se fundamentează principiile teoretice și metodice ale pregătirii pedagogice a cadrelor didactice în condițiile mediului informațional și educațional al unei instituții de învățământ. Au fost desfășurate direcții și factori principali ai formării mediului informațional și educațional al universității. Modelul de sistem de formare pedagogică a cadrelor didactice este dezvoltat în condițiile mediului informațional și educațional care conține următoarele blocuri: conceptual-conținut, organizațional-tehnic; diagnostice și productive.

**Cuvinte cheie:** pregătire pentru profesori, școală elementară, tehnologie informațională, tehnologii cloud, mediu informațional și educațional.

The purpose of the research is to substantiate theoretical and methodological foundations of pedagogical training of teachers in the conditions of informational and educational environment of a university.

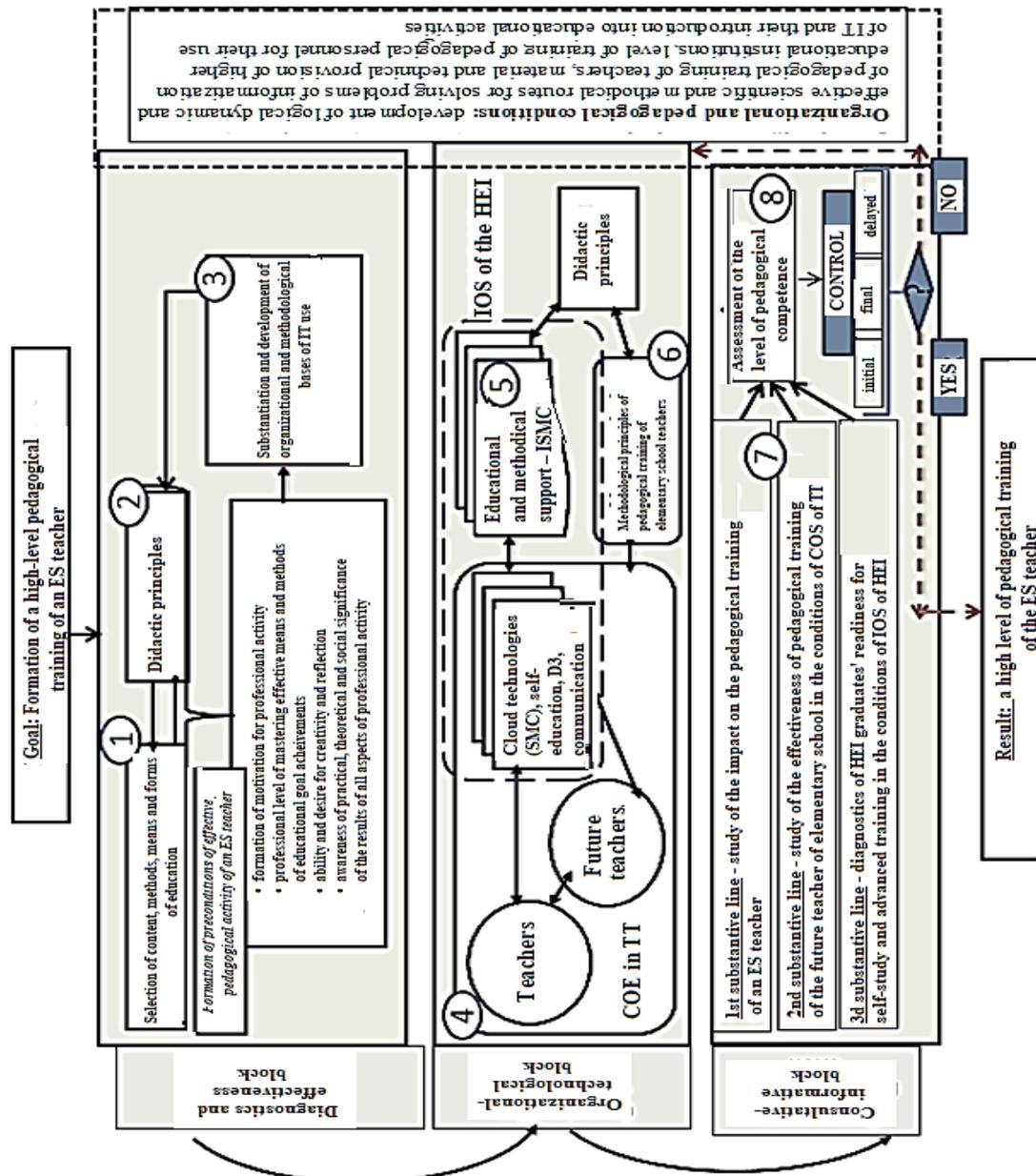
Organizational conditions for pedagogical training of teachers in the conditions of informational and educational environment of a university are a system of interconnected

IT tools, software tools of cloud services designed to ensure openness and accessibility of selection and modification of educational management tools; Diagnosing and controlling education at all stages with a view to its possible adjustment (application of personality-oriented approach); multilevel and differentiated approaches in training with the possibility of continuous on-line and off-line assistance; flexibility of the training organization - through the independent decision-making on the sequence of actions, time, training strategy, etc.; ensuring reliability, comprehensibility of the environment as a holistic and open electronic space; free access to educational and methodological materials and means of support of pedagogical activity, intended to improve the process of pedagogical training; systematization of theoretical materials on pedagogics; establishment of continuous connections of theoretical training with practical activity; organic combination with traditional pedagogical technologies; supplementing traditional system of means and forms of education; modeling and demonstration of phenomena that can not be observed in the educational environment. Pedagogical conditions of pedagogical training of teachers in the conditions of informational and educational environment of higher educational institutions are directed to ensuring the purposefulness of COE of TT; awareness of the participants of the educational process of COE of TT, the goals of its design and its individual components; awareness of participants of the educational process of the cloud technologies operation, their peculiarities in pedagogical training; adaptability of the learning process; stimulation of cognitive activity aimed at achieving the goal; increase of IT competence of the university teachers; formation of motivation of educational and cognitive activity; formation of awareness of the need for knowledge; ensuring individualization of the learning process; application of personality-oriented approach; formation of cognition – the ability to present educational material that promotes the stimulation of internal mental processes (process of problem solving, memory, speech processes, mental activity, etc.); creativity; ability and motivation to independently search and select materials necessary for obtaining knowledge; a high level of pedagogical efficiency, determined by the mobility and multifunctionality of IT. The above mentioned allowed to create a model of teacher training system in the conditions of the informational and educational environment of the higher educational institutions (IEE of Higher Educational Institution) (picture 1).

The purpose of experimental verification was to identify the effectiveness of the proposed model of the pedagogical training system under the conditions of the COE of the HEI, which contains conceptual-content, organizational-technological and diagnostic-productive units.

In accordance with the purpose of the experiment, the following objectives were formulated: to determine the criteria for the effectiveness of the developed model of the pedagogical training system under the conditions of the COE of the HEI; find out the initial condition of the subjects of the experiment; to check the effectiveness of training

of the proposed model in the process of studying pedagogical disciplines by comparing the final indicators of selected criteria with the input; determine the factors influencing the effectiveness of learning. As indicators of teacher's competitiveness we identified the following components of pedagogical competence: value-motivational; cognitive; active; informational and technological.



Picture 1. Model of the system of pedagogical training of teachers in conditions IEE of HEI

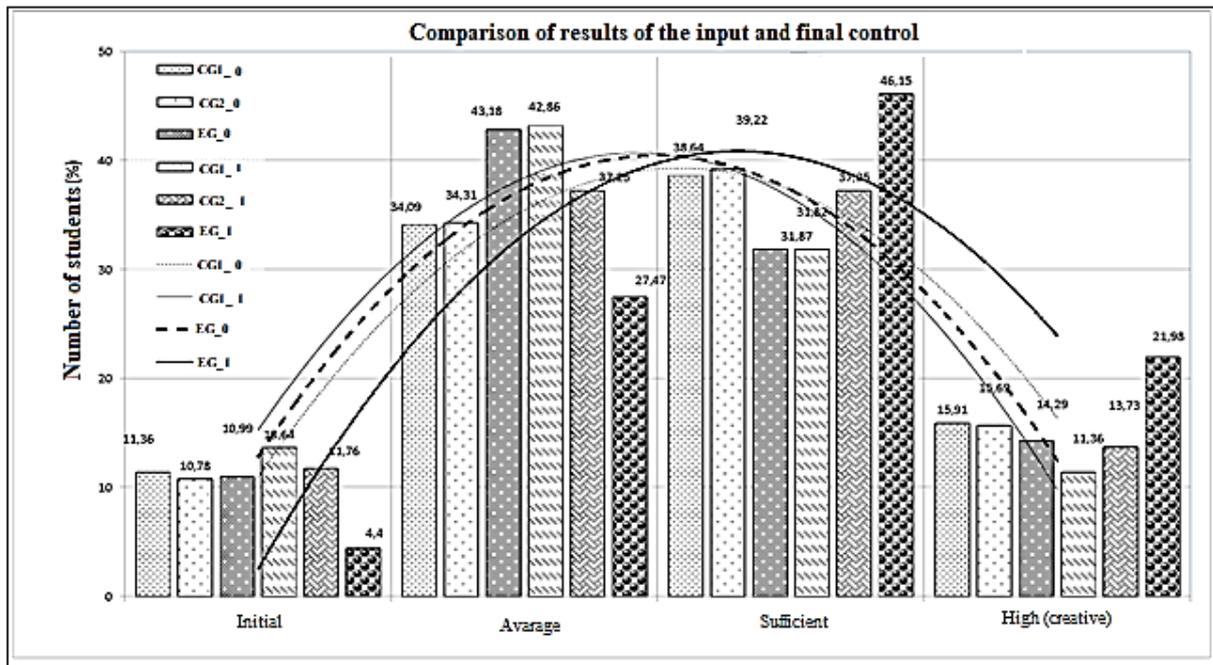
Thus, the level of formation of a competitive personality of a teacher as a HEI graduate is ensured by implementation of a complex of socio-psychological, pedagogical, organizational, material and technical conditions that are aimed at the formation of an innovative educational environment; stimulating self-improvement of personality of the HEI graduate, his/her self-transformation, ensuring the subjective position of students in the educational process, enhancing creative nature of their activity, development of incentive motivation to study.

So, as criteria of evaluation of the investigated quality of teachers formation, the following components were highlighted: value-motivational; cognitive; active; informational and technological, each of which has its own indicators. The experiment focused on the distinguished by scientists main indicators of pedagogical competence of a teacher: personal qualities, especially transformational and psychological; awareness of the role of a teacher in educating a citizen; continuous improvement of general and professional cultures; search activity of a teacher; mastering of pedagogical research methods; designing own pedagogical experience; effectiveness of the educational process; active pedagogical activity, aimed at transforming the personality of a student and a teacher. In accordance with the distinguished components and their indicators, four levels of competence of future teachers were determined: initial, middle, sufficient, high (creative).

At the stage of the experiment there was collected information on the levels of the previous formation of pedagogical competence of students of experimental and control groups. Statistical testing of hypotheses allowed us to conclude that the data obtained during the experiment, in general, do not contradict the hypotheses regarding the absence of statistically significant differences in the groups according to the chosen indicator.

The data obtained during the confirmatory experiment are inputs for the evaluation of the impact of the application of the experimental model of a teacher training system in the conditions of the IOS of the HEI on the level of formation of pedagogical competence. The results of the final control (testing and diagnostic tests), as well as the results of the delayed control, showed a significant positive impact of the developed model of the TT system of future teachers in the conditions of IOS of the HEI. The obtained results of the final control are presented in picture 2 and picture 3.

The results of the final control indicate the effectiveness of training on the proposed model. Thus, the number of EG I students in the experimental group with a high level of formation of pedagogical competence increased by almost 8%, and with sufficient – by 15%. According to the results obtained by students from the first control group, the indicator of high pedagogical competence decreased by 7%, and sufficient – by 5%, while in the second control group the number of students with high and sufficient levels decreased by almost 2%. The number of students of EG II in the experimental group with a high level of formation of pedagogical competence increased by almost 9%, and with sufficient – by 13%.

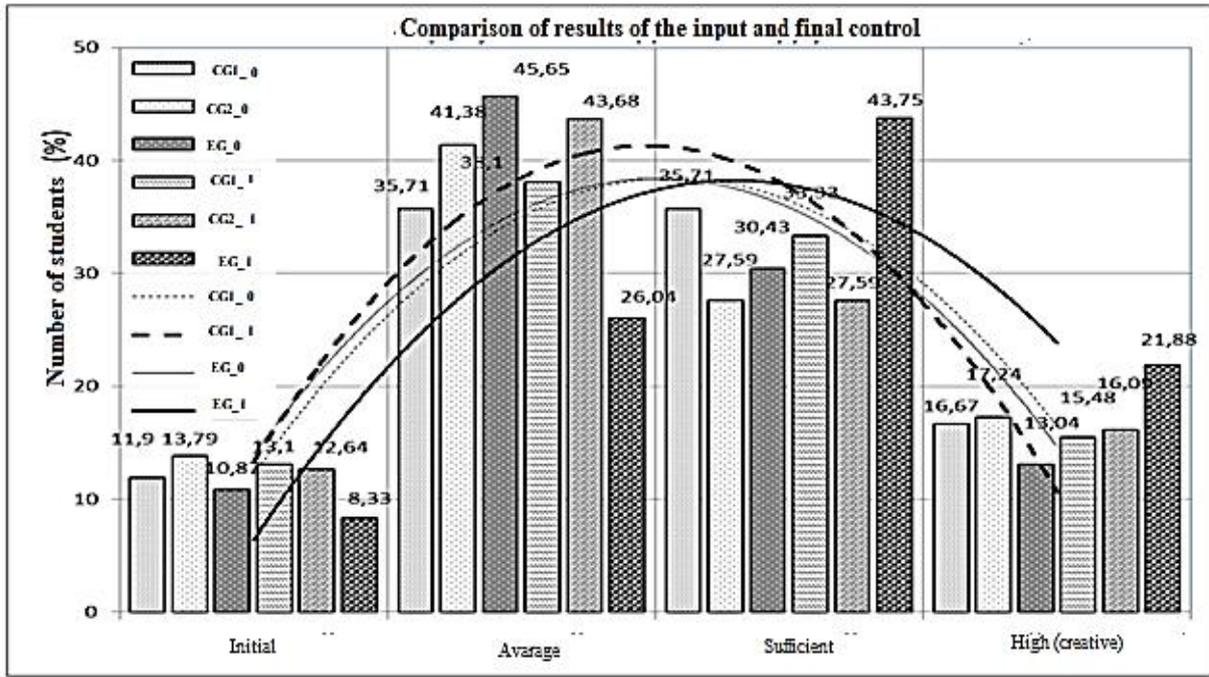


Picture 2. Distribution of the levels of pedagogical competence formation of control and experimental groups students (for EG 1)

Differences between the students distributions by the level of pedagogical competence is quite clearly seen in comparison of ogives distributions (trend lines) for the data of one of the CG and EG. According to the results obtained in the first control group, the indicator of high level of knowledge decreased by 1%, and sufficient – by 2%. In the second control group, the indicator of sufficient level of knowledge remained unchanged, while the high one dropped – by 1%.

Usually this is normal for the traditional organization of training in the system of higher education and such differences, as shown by the results of statistical analysis of input data, are within the measurement error. The ogives of the student distribution by success groups before and after training practically coincide. Exposition of the results of experimental training in Pic. 2 makes it possible to state that the maximum distribution of students by the learning achievement groups, as mentioned above, has essentially shifted to a high level.

In accordance with the goals and objectives of the study the theoretical generalization and practical solution of the scientific issue of theoretical and methodical principles substantiation of pedagogical training of teachers in the conditions of the informational and educational environment of the higher educational institution, taking into account practical needs of teachers and the requirements of society for the organization of educational process, is carried out. In the course of the study, the goal was achieved, all tasks were completed and the following main results were obtained.



Picture 3. Distribution of the levels of pedagogical competence formation of control and experimental groups students (for EG 2)

Studying the state of theoretical and methodological foundations research of pedagogical training of teachers in the conditions of the informational and educational environment of a higher educational institution in pedagogical, scientific-methodical literature and pedagogical practice has made it possible to find out that intensive, dynamic and innovative development of Ukraine becomes probable due to awareness of the importance of ICT education for the subjects of the educational process, their importance in the formation of professional competences of teachers; means, methods and forms of training update with the purpose of qualitative preparation of students for life activities in the conditions of informatization. The results of the empirical analysis of the state of an issue research pointed out that nowadays, in the professional activity of a modern teacher, it is necessary to search for non-standard ways of solving pedagogical tasks related to the education and upbringing of students, which can not be solved by traditional ways and approaches. A detailed analysis of the results of theoretical scientific developments made it possible to find out a number of contradictions that occur in the pedagogical training of a modern teacher, in particular the contradictions between the need for training of a competitive teacher, the pedagogical activity and the professional level of which correspond to the principles, norms and requirements of the informational high-tech society and the lack of IT-oriented pedagogical educational environment focused on his/her pedagogical training.

In the process of distinguishing theoretical and methodical principles of pedagogical preparation of teachers in the conditions of informational and educational environment of a higher educational institution, it was found out that the result of pedagogical training

depends on the organizational and pedagogical conditions of the COE in TT, which provide the implementation of its concept, give its structure a systemic and logical character, provide the formation of knowledge, skills and competencies of a competitive teacher. Organizational-pedagogical conditions is the existence of a system of interrelated IT tools, software tools of cloud services, designed to ensure the openness and accessibility of the selection and modification of educational management tools; interactive learning organization; diagnostics and control of training at all stages with a view to its possible adjustment (application of personality-oriented approach); feedback; multilevel and differentiated approaches in training with the possibility of continuous on-line and off-line assistance; the flexibility of training organization.

The main directions and factors of the formation of the informational and educational environment of the higher educational institution are: the improvement of the educational environment of the HEI and the development of an open, multidimensional dynamic real space that provides interaction and cooperation of the subjects of the educational and disciplinary process (EDP), development of personal qualities of teachers and students in the process of resolving pedagogical issues. Cloud technologies are seen as one of the most promising means of creating and updating the training and teaching materials base. CT prospects suggest that, unlike traditional, teaching and methodological support, developed under the conditions of COE of TT, it will be open and dynamic, elementary changeable and responsive to a wide range of teachers with different levels of IT competence.

There has been developed a model of the system of pedagogical training of teachers in the conditions of the COE of the higher educational institution, which contains the following blocks: conceptual-content, which necessarily involves the formation of prerequisites for effective pedagogical activity; organizational and technological; diagnostic and effective. Involvement and implementation of the COE of TT in the IOS of higher educational establishments testifies that one of the most effective forms of using IT opportunities in the pedagogical training of future teachers is the inclusion of their varieties in all types of activities of a teacher: communicational, organizational, educational and disciplinary. The didactic significance of the COE of TT in increasing the effectiveness of teaching is dependent on logical application and determination of the place of rational approaches in choosing CT. The experimental checkup indicated the effectiveness of the developed model, which was attended by students of experimental groups, since its use made it possible to improve the quality of students' pedagogical knowledge, to form independent work skills and to increase the level of professional motivation.

The analysis of the results of the pedagogical experiment confirmed the effectiveness of the developed model of pedagogical training of teachers in the conditions of informational and educational environment of the HEI. The conducted research does

not exhaust all tasks concerning pedagogical training of teachers. An issue of application of CT at school requires further research in order to support the continuity of the educational process, in the system of postgraduate education of teachers, etc.

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