УДК 378.14:004.3

MODEL OF CLOUD ORIENTED LEARNING ENVIRONMENT OF PEDAGOGICAL SUBJECTS IN PEDAGOGICAL INSTITUTIONS OF HIGHER EDUCATION

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*Annotation.*The article deals with the problem of project and effective implementation of cloud oriented learning environment at the level of each separate pedagogical institutions of higher education, as well as at national level by the search for solutions of problems that arearisenin IT usage as means of indispensable education nowadays and direction is withdrawal or reduction of psychological barrier, observed in a significant number of possible users who are not IT experts. Author's algorithm is proposed to implement them with the solution of theoretical and practical plan.The necessity ofmodernizationasprocess of primary school teachers training and further continuous support of their work at educational institution,modelling the cloud oriented learning environment training basic requirements to international and national directives and guidelines should be considered. Semantic content should include options for their specificity in educational programs.

Keywords: motivation, pedagogical competences, interactive learning, learning environment.

The integration of properties of traditional and innovative teaching methods can cause the emergence of new major training attributes for primary school teachers training (PST).

The designing of Cloud Oriented Learning Environment(COLE) fortraining is a phased process that provides gradual implementation of cloud technologies (CT)for the educational processin pedagogical institutions of higher education (PIHE) with consecutive and rational substitution, or addition of traditional methods, forms, and means of education, that are not enough effective.The expected result is the improvementof learning outcomes and the quality increasingof future teachers training in general.

The experience ofinformation technology (IT) using in education confirms that the most effective form of use is their inclusion to the educational andmethodical complex, i.e. the use of ITmeansas additional materials for lecturer and future teacher (PIHE student).

Transition to the model of COLE trainingas an innovative component of PIHE educational environment, creation of conditions to this process, testing and implementation of COLE training, searching the waysoflogical combination of new and traditional are complex tasks that need solution of technical, educational, methodical, organizational, psychological, pedagogical, administrative and other problems.

We propose to define some trends of outlined problem solutions.They are:
- development of logic, dynamic, efficiently scientific and methodological solving of routes to the problem of PST trainingin the courseof informatization;
- logistical support in PIHE;
- level of preparedness of teaching staff for usingIT and its implementation in training activities;
- training of PIHE students in usingIT and obtaining knowledge in conditions of COLE training;
- the development of methodological guidelines for the organization of training activities in conditions of COLE training.

This approach provides theobservance of certain psychological and pedagogical prerequisites at the planning stage of designing and creation of COLE training, and at planning stage of educational process. Psychological and pedagogical aspect is an area of influence that determines the level of progress of various activities: educational, organizational and research. Psychological and pedagogical problemsare caused primarily by the fact that all directions of IT usage in education are enclosed by it.. First of all, it is the search for solutions of problems that were arisen in IT usage process as means of indispensable education nowadays.Among them there are clarification of psychological specifics in PC usage by the students according to their individual and typological characteristics. The second, equally important direction is withdrawal or reduction of psychological barrier, observed in a significant number of possible users who are not IT experts.There is a need to develop specific measures aimed at mastering modern IT as modern toolkit of training, educational and organizational activities at PIHE level.

For the purpose of project and effective implementation of COLE trainingthe certain measures should be carried out at the level of each separate PIHE,as well as at national level. Author's algorithm of itsimplementation with the solution of theoretical and practical planis proposed. It includes:
- determination of methodological purpose of IT application in the educational process;
- determination of methodological application purposes in the educational process of specific CT;
- development of methodological approaches combining the group and individual learning;
- the development of CT using ways, aimed at enhancing the educational, cognitive and creative activity of students;
- formation of CT using ways with orientation to continuous development of their independence;
- implementation of continuous monitoring of learning process;

•organization of productive management of educational process;

•the logical combination of directed IT and traditional forms of education;

•the suitability of certain CT for use in full-time and part-timelearning;

•the focus on certain stages (courses) on mastering of new knowledge and forming of new skills;

•focus on certain stages (courses) of skills using;

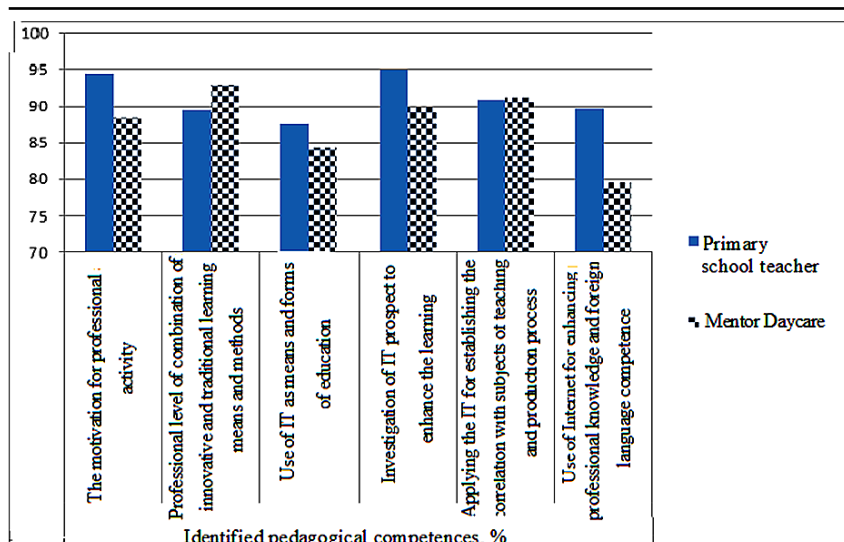•review and generalization of educational achievements.

Studying the innovative processes of education system Y.I. Zavalevsky indicates the «Qualitatively new stage of interaction and the development of scientific, educational, and pedagogical art, and application processes of its results.It is characterized by the tendency to bridge the gap between processes of creating of pedagogical innovations and processes,adequate evaluation, mastering and application, as well as to overcome the contradiction betweenspontaneity of these processes, the ability and need for conscious management» [1, p. 174].

Thorough understanding of cogency of pedagogical activity, motivation and inner vocation to the profession, the evaluation of potential reserves of its implementation, possibilities of realization of creative needs are the main qualities inherent for creative teachers. Proceeding from the statements of Y.I. Zavalevsky,the conditional division of creative teachers into categories, which is characterized by an innovative approach in teaching activities,is made (table 1).

Prerequisite of formation of teachers' creative skills is the motivation to the profession, professional level, combination of traditional and innovative training means and methods, abilities and desire,creativity and self-realization. According to the author's prognostic vision of the spectrum of educational activities in informational conditions the identified qualities are supplemented by a list of pedagogical competencies. It includes IT using as means and forms of organizational education, IT envisaging of perspective opportunities for enhancing the learning process quality, IT using for establishing the interconnections with subjects of teaching processand Internetusingfor improving the level of professional knowledge and foreign language competence.

Future teacher receives fundamental pedagogical knowledge through the study of unit of teaching disciplines. However, analytical author's studies and observations point out their insufficiency.

In particular, work with PIHE students and teachers (students of master degree of extramural learning) allow presenting the following data on the level of formation of PST pedagogical competences (the following interre-

Table 1

Conditional division of creative teachers into categories

№	Creative teacher	Characteristics and ways of creative searching ofinnovation achievements
1	Inventor	Through personal quest
2	Modernizer	Improvement of traditional systems and their components
3	Professional	Perfect use of traditional systems (approaches and methods) vs. innovative

lated research methods as observation, surveys, interviews, questionnaires, testing are used) (table 2).

At pic. 1 the result of experimental data of level of pedagogical competences formation is presented (according to Table 1.)

Suchtable data show that future teachers indicate the fact that about half of them are not motivated to professional activities by abilities and skills.Only half of them is characterized by combination of traditional and innovative educational means and methods at professional level. Regarding the use of IT and increasing the level of professional skills and foreign language competency for the use of Internet, we can argue that PIHE training system in this aspect should also be enhanced greatly.Because future teachers say they are prepared quite poorly for application of innovations.

Thedescribedaboveleadstotheconclusionofurgent, but not sharp, hopping, «reset» process of PST preparing, as further continuous support of their work at educational institution.

According to the hypothesis of author's research, based on the allegations of improving the educational quality, provided active and thoughtful consideration of the informational trends, formationof open organization in educational process, and taking into account the multidisciplinary integration of pedagogical subjects, their contents, forms and methods that are implemented,the need to clarify of organizational and didactic nature of modeling of theCOLE training is determined.

The didactic essence of CTfunctions opensthe learning possibility (in classroom and extracurricular work)in real time and taking into account possibilities ofIT and means quality, that operate on their basement or by their involvement. This includes:

Oopenness and accessibility of facilities of training activities management;

Oflexibility and dynamic selection of ingredients, according to the learning objectives and learning management;

Table 2

The level of pedagogical competencesformation of primary school teachers

№	Group	No. of students in 2014-2016 academic year	The motivation for professional activity	Professional level of combination of innovative and traditional learning means and methods	Use of IT as means and forms of education	Investigation of IT prospect to enhance the learning	Applying the IT for establishing the correlation with subjects of teaching and production process	Use of Internet for enhancing professional knowledge and foreign language competence
						Identified pedagogical competences, %		
1	PST	476	44,4	58,5	25,6	35,8	63,6	59,1
2	Mentor Daycare	137	48,6	72,9	24,3	29,8	81,1	59,5

Pic. 1

•creativity as use of teaching means and presenting educational materials aimed at forming creative approach in gaining knowledge, forming ability of creative, logical and systematic thinking, and self-employment;

•dynamicsas use of differentiated approach, considering personal qualities and learning environment individually for astudent or forseparate-group;

•interactive training organization for collective (group) or individually for astudent;

•cognitivity aspossible implementationofeducational material presenting in a way that leads to impulse mental activity;

•observance of didactic principles in the choice of rendering methods of training material;

•motivation and stimulation of cognitive activity through interactive learning;

•focus through the students' awareness about the training purpose;

•providing of personal orientation, choice of individual learning paths and the possibility of self-selection strategy training;

•monitoring continuity and evaluation at all stages of training;

•feedback in order to obtain the data that can be used for adjusting the educational process;

•multi-level working organization with educational material and with the ability of iteration and selection of training stages.

Constituent attributes of COLE training for PST determine the quality of teacher training system in PIHEin general, including those based teaching methods that are used.

In particular, the use of interactive teaching promotes the formation of additional specialized competencies (i.e. the using IT as means and forms of organizational learning; exploring the prospects of IT capabilities to improve teaching activities; carrying out the training organization of primary school students by using interactive methods;applying the IT to establish communication and information relationships with students, their parents, peers and administration; using Internet to improve their professional knowledge and foreign language competence (knowledge of foreign language); searching vocationally educational and scientific literature withIT means etc.), which are

important components of general competence of modern competitive teacher.

The term «interactive»as V. Lapinsky explains [2] «came to us from the English, its components are: «inter» and «action». Process may be interactive, which happens as interaction between the subjects. The concept of interactivity can be applied to a process that is directed by the influence of certain subject(s). Above all, the interactivity implies the dialogue, during which the interaction between the pupil (student) and teacher out or mediate through software and hardware (computer),and interaction between the pupil (student), and author(s) of educational computer program is carried. Another defining characteristic of interactivity of learning process is to providethe opportunity of operative correction of content and focus on the analysis dialogue with pupil (student). Under the conditions of interactive teaching methods using the learning process is organized so that almost all the pupils (students) are involved in the process of cognition. They are able to understand what is going on and reflect the results of their teaching and learning activities through the operational definition of these results».

We consider that it appropriates to use the wording of the term «interactive learning» as [3] «the organization of the system of techniques and methods of educational process, based on the subject-subject relations between teacher and pupil (student) (parity), multilateral communication, designingof pupil's (student's) knowledge; use of self-assessment, feedback and constant pupil's (student's) activity».

Undoubtedly, interactive learning can be organized through the active use of modern learning means, particularly IT because of heuristic conversations, organization of group (collective) activities, role playing games and more. It requires from PIHE teacher the formation of high levels, pedagogical competence and pedagogical skills outlined above.

Explaining the difference between traditional and interactive learning, O. Pometunasserts that «in the context of interactive learning knowledge acquires another form. On the one hand, they have some information about the world, the main peculiarity is that pupil (or student in our work (author) receives it not like a finished system froma teacher, butwith the helpof his own activity. On the other hand, in the process of class interaction with other pupils (students) and teacher he masters the system of tested ways regarding themselves, society and world in general, creates various search engines of knowledge in individual and collective activities. Therefore, the knowledge gained by pupil (student) is also a tool for self-obtaining [3, pp. 7−8].

Directing to interactivity while preparing teachers we should substantiate sufficiently and profoundly the integrated cloud technologies. Getting access to a wide range of educational materials in the «cloud», a customer in the first place, should be able to use interactive means of communication with teacher,making and checking the tasks.

Personal orientation in preparing future PST provides the authentic, professionally oriented approach that must comply with the following requirements:

•ensure the possibility of individual learning paths;

- provide an opportunity to take into account personal abilities of individual;
- provide balance (identity) of integrity of environment and the choice of its structural components;
- allow for the possibility and necessityofenvironment in different size and type;
- allow variability in achieving top (fundamental) target and the possibility of variation or adjustment.

Modellingthe COLE training basic requirements to international and national directives and guidelines should be considered.Semantic content should include options for their specificity in educational programs.

The insurance of correct functioning and reliability of COLE training as an integrated system is equally important. PIHE teachers get access to electronic databases of educational and training materials as supporting means of individual and professional activities.Improving the preparation process, as an additional effect, they can promote interest for acquisition of knowledge through innovative applications that opens the way access to modern sources of information, generates skills and motivation to self-knowledge acquirement.

The fact aboutquality of COLE training as a new component of PIHE learning environment that defines new quality of PST training in general is also important.

The components of COLE training can have different volumes, belong to the sameor different (several) theme(s), training courses and disciplines. However, development strategy of future PST, his fundamental and additional ways (branching), formed by mandatory adherence of individually oriented approach must be allocated as headline of environment.

In course of development the conceptual modelling principles of COLE training and according to the vision of V. Lapinsky [2, p. 5], the primary factor was the isolation of «key applications of training means innew generation assuch components of learning environment as:

- modeling phenomena;
- visualization of mathematical models;
- replacement of field experiments with computer models;
- laboratory work with using of virtual equipment;
- creation of measuring,simulating systems, control systems, including real devices, physical objects connected to the computer via the instrument interface,i.e. software and hardware intended for analog-to-digital conversions;
- creation and use of domain-specific activity-processing environments for the real results of the experiment;
- operational monitoring of the educational process using computer systems and determining the level of educational achievement;
- the creation and use of computer reference, information and expert systems, as well as systems with elements of artificial intelligence».

A priori modeling process includes the observance to curriculum and programs of all courses and disciplines of pedagogical orientation. Because the means to achieve learning objectives arecurriculum, that are normative documents.

Curriculums describe the knowledge and skills that are received and formed by a student in learning process of the discipline. The curriculum is createdby certain structure that provides a list of educational topics; number of hours allocated to each study subject; educational and thematic modules and learning periods.

Practice points to the possibility of typical programs developing that are basis in the formation of educational programs. They were determined by purpose of training the specialists, distinguishing of advanced training ideas,range of existing knowledge and skills described in more general perception. A typical program generally includes guidelines, obligatory description of methods and means that lead to the expected results and list of recommended basic and additional literature (references).

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Бахмат Н. В. Проектування хмаро орієнтованого середовища навчання педагогічних дисциплін у вищих педагогічних навчальних закладах

Анотація. У статті розкрито проблему проектування та ефективного впровадження хмаро орієнтованого середовища педагогічної підготовки на рівні кожного окремого вищого педагогічного навчального закладу й на загальнодержавному рівні шляхом пошуку напрямів вирішення завдань, які повстають у процесі використання ІТ як необхідного на сьогодні засобу навчання, та зняття або зниження рівня психологічного бар'єру, який спостерігається у значної кількості ймовірних користувачів, які не є фахівцями в галузі ІТ. Запропоновано авторський алгоритм їх реалізації з вирішенням питань теоретичного і практичного плану. Доведена необхідність модернізації як процесу підготовки вчителів початкової школи, так подальшої неперервної підтримки їхньої діяльності у навчальному закладі шляхом проектування хмаро орієнтованого середовища педагогічної підготовки, визначено потребу в урахуванні базових вимог на рівні міжнародних та загальнодержавних директив та положень; змістове наповнення (контент) — повинен містити варіанти їх конкретизації у навчальних програмах.

Ключові слова: мотивація, педагогічні компетентності, інтерактивне навчання, навчальне середовище.

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Бахмат Н. В. Проектирование облачно ориентированной среды обучения педагогических дисциплин в высших педагогических учебных заведениях

Аннотация. В статье раскрыта проблема проектирования и эффективного внедрения облачно ориентированной среды педагогической подготовки на уровне каждого отдельного высшего педагогического учебного заведения и на общегосударственном уровне путем поиска направлений решения задач, которые возникают в процессе использования ИТ в качестве необходимого сегодня средства обучения, и снятия или снижения уровня психологического барьера, который наблюдается у существенного числа возможных пользователей, которые не являются специалистами в области ИТ. Предложен авторский алгоритм их реализации с решением вопросов теоретического и практического плана. Показана необходимость модернизации как процесса подготовки учителей начальной школы, так и дальнейшей непрерывной поддержки их деятельности в учебном заведении путем проектировании облачно ориентированной среды педагогической подготовки, определена потребность в учете базовых требований на уровне международных и общегосударственных директив и рекомендаций; содержательное наполнение (контент) должно содержать варианты их конкретизации в учебных программах.

Ключевые слова: мотивация, педагогические компетентности, интерактивное обучение, обучающая среда.

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