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Forming professional Competence of Future Teachers through the Use of Information and Pedagogical Technologies

Key words: *professional education, communication, information technologies, distance learning, pedagogy.*

Annotation: *The article discusses following issues: the process of the shaping professional competency of a future teacher; the influence of information technology on the development of a creative student; efficient usage of training electronic simulator in pedagogical process; the revealed complex of the pedagogical conditions which render the assistance to the improvement of future teacher training.*

Ongoing globalization and informatization of economy of the Republic of Uzbekistan, increasing competition, both domestic and international markets make successfully operating enterprises to revise the preparation of future teachers of vocational education. Teaching professionalism is associated primarily with a high level of self-realization of individual personality and ability to the individual style of activity. This style is produced in the process of studying in the University and is a system of individual unique techniques that ensure success in the future. In high school preparation specialists the idea of formation of professional competence of a future teacher should become a priority. The ways of forming of professionalism may be different. Possession of the required amount of professional knowledge, skills, defining with formation his pedagogical activities pedagogical communication and the personality of the teacher as a carrier of certain values is defined as professional and pedagogical competence is an integrated professional and personal characteristic of the teacher.

The formation of pedagogical competence of a person in the University is carried out in three directions:

• basic training (professional and psycho-pedagogical knowledge)

• methodological culture, pedagogical creativity and creativity.

The system of higher professional education shapes the future specialist and prepares it for future professional activity. A complex set of qualities, which should have a modern specialist can develop a system that will be used all positive, that is, in traditional teaching, and introduced new, sustainable approaches that compensate for the shortcomings of the existing system in their mutual complement.

Regardless of the specialization and the nature of the future professional activity, any novice specialist must possess fundamental knowledge, professional and pedagogical skills. Equally important in acquiring the knowledge, skills and abilities have experience in creative, research

and independent activities, allowing future specialist to determine its position on one or other professionally oriented question or problem.

The aim of University education is not the filling of a student a certain amount of information as the formation of his cognitive strategies of self-learning and self-education as the basis and an integral part of future professional activity.

Currently, universities, there are two conventional (classroom), classroom training of students. In our opinion, today the actual learning of the students with the use of information technologies-information and communication, leading to the formation of professional competence in the process of preparation of future teachers to the profession.

A promising direction, describing a new form of student learning, due to the introduction in educational process of information technology, accompanied by the increase of students ' independent work. The trend towards the development of information and communication forms of independent work of students, providing greater independence of students, greater individualization of tasks relating to the contents of the material and the nature of the control, to determine the changes in the development of society, the inclusion of society in an active information and communication the process of informatization.

The ability to prepare future teachers for their professional activity with the use of information technology are expanding. Current becomes independent work training programs, testing systems, and information databases. Essentially, all known types of electronic publications can serve as the basis for the formation of professional competence of future teachers. The most effective of them is the "E-learning trainer" (ELT), developed under the guidance of Professor Muslimov N. A. and creative teams of Tashkent state pedagogical University and Tashkent Institute of textile and light industry successfully used for lectures, seminars, practical and laboratory classes in many universities of Uzbekistan. Training of students on the basis of use " ELT" continues throughout the study of the disciplines, specialty, focused on the formation of professional competence of future teachers (4). When building structures "ELT" on special subjects creative team Tashkent state pedagogical University has developed recommendations for its development and use. These include:

- a clear definition of objectives, content, forms, methods and means of teaching, to formulate the tasks and functions of computer support, appropriate electronic resources

- selection of educational material takes into account the basic didactic principles

-selected educational material should be as close to the future profession

- work with students with e-learners trainer should, is carried out in stages.

The first phase: a theoretical study of the technological process (its features) of a real object. This study may be made at lectures or independently (under the guidance of a teacher).

The second phase:at this stage of the study (Manual) machine and all supplied to the simulator teaching materials (lectures, descriptions of tasks and situations, and so on). The study is performed as a rule, independently, either individually or in a group) in consultation with the teacher. In addition to teaching at workshops, simulators should be used when testing the skills of the students. In this case, the actions of the operator (trainee) should be aimed at solving problems that arise when solving the given tasks.

The third phase: in this phase, the direct work of the student (group) on the simulator under the supervision of a teacher, which determines the order and the number of tasks, selects situations and highlights the priorities of the process. It should be noted that this can be used

by the teacher during lectures as illustrative material (small audience). However, this requires a high level of professional training of the teacher and some experience in using computers (1, p. 132).

Students, working with e-learning, simulation, have access to three modes: training mode the training mode: the control mode.

The TeachingModeis basic and is designed to teach problem solving, and learning the basic theoretical knowledge.

It includes the following tabs:

• abstract (brief description (ELT))

• instruction manual for users

• lecture notes on special discipline; reference information

• the Glossary (1).

In training mode you can use reference materials without limitation.

The Training Modeallows you to consolidate the theoretical knowledge obtained in the lectures, and to develop the skills to build a process flow diagram and process calculations, designing the flow and its planning decisions. The training process takes place using concrete examples.

During the execution of the works in this mode, students perform tasks on well-known algorithms, carried out the necessary calculations specified according to individual job parameters and analysis of process flow diagrams, generate the layout of the shop in the graphics editor, simulator, output to print the report on the completed tasks.

The Monitor Mode is used to test knowledge. To assess the extent and level of the learning material is intermediate test, which gives an opportunity to correct training towards individual work learners as a teacher, and for independent work. The mode control testing introduced in the simulator to organize self-preparation and self-assessment.

The student can carry out a free navigation through the list of questions, to return to any question, correct answers. Since we are not talking about a test audit knowledge. No time limit on the user experience is not set, the list of questions generated by taking into account the semantic context and helps the student to better learn course material. In the process, the student receives a message that the number is not correct answers.

The structure and content of electronic training simulator is illustrated in the following table.

"E-learning trainer", developed to study spectrum has been tested in many universities of Uzbekistan in the process of professional preparation of future teachers. Observations during classroom with students from these groups, as well as their impressions, comments and suggestions regarding the work with the computer simulator allowed us to draw the following conclusions:

• to work with the simulator requires the basic skills of work with computer in the Windows environment, which has become more meaningful and varied after the conduct of simulator training;

• this differs intuitive interface and simple controls that facilitate the development of students and minimizes the number of errors when performing laboratory work on the simulator;

• working on the simulator, students not only adhere to individual tasks, but also offer and adapt their own technical solutions, showing their creativity;

• mastering these disciplines generally occurred more rapidly and more deeply among students from groups using the study course computer simulator, compared with students conducting laboratory work only on training the stands of the Department of (4).
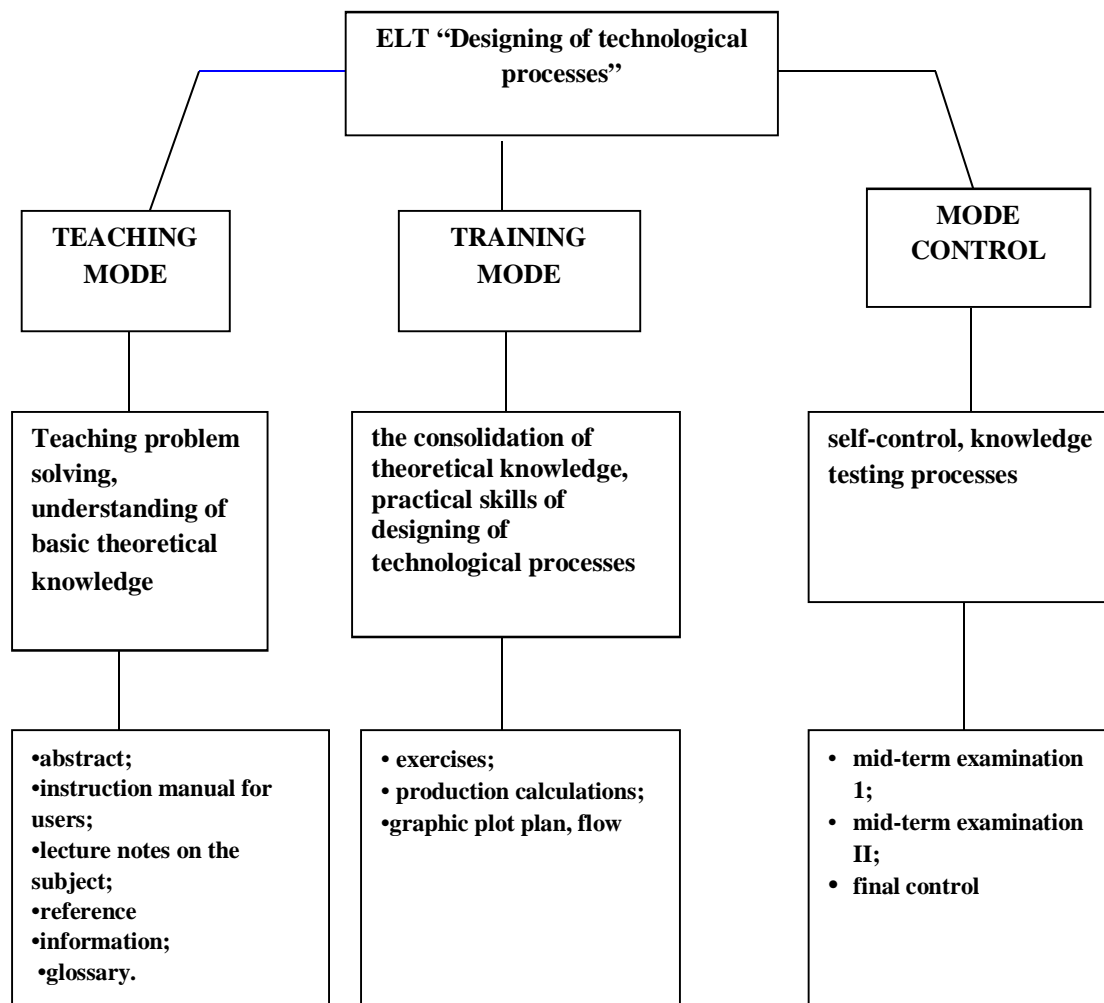
ELT "Designing of technological processes"

TEACHING MODE	TRAINING MODE	MODE CONTROL
Teaching problem solving, understanding of basic theoretical knowledge	the consolidation of theoretical knowledge, practical skills of designing of technological processes	self-control, knowledge testing processes
•abstract; •instruction manual for users; •lecture notes on the subject; •reference •information; •glossary.	• exercises; • production calculations; •graphic plot plan, flow	• mid-term examination 1; • mid-term examination II; • final control

Figure 1. The structure and content of "E-learning trainer"

Thus, the introduction of electronic training simulator allows to significantly improve the quality of teaching a particular discipline due to its customization and clarity, and the acquisition of skills in using modern information technologies and the development of a virtual computer space contributes to the formation of professional skills of future specialists.

Effective by improving the preparation of future teachers is the use in the educational process and educational technology training and education.

Consider the possibilities of modern educational technologies, their impact on innovation readiness and professional development of future teachers.

One of the areas of improvement of professional training of teachers is increasing its creative potential, the development of the intellectual, heuristic search abilities-transformative way of thinking. Leading means of achieving these objectives is problematic instruction, which is interpreted as the technology is developing training (5).

Problematic instruction based on search activity and involves the application of a wide range of tasks challenging, unconventional type, aimed at developing students skills: forming

problems, hypotheses, plan a system of actions aimed at solving problems; to update the information; available to reconstruct the known information; to monitor the progress of solving the problem; to analyze and summarize the results; to apply the General and specific research methods.

That is, the search student activities must contribute to the formation of skills of mastering the technique of organizing and conducting research work.

Practice shows that in this task plays a big role project method. Project method because of its didactic entity can solve the problem of formation and development of all the above skills and creative thinking. The method of projects is the development of skills creative self-activity. Through detailed development issues, project activities, students learn to solve problems and predict the practical results of (5).

In our practice, the project method is used as an independent individual and group work. Students are encouraged to solve the problem related to their professional activities. For example, students are given these tasks:

1. To develop the algorithm of the teacher and students in different types of training, to determine the content of this activity when using partial search and research methods.

2. To develop options for non-standard lessons (lesson art lesson - business game, integrated lesson) and to protect the project.

3. Develop lesson, which would be presented of techniques to generate interest in the new teaching material and methods the introduction of the new.

Students independently or jointly solve the problem, using the knowledge gained practical result, completing the project in the form of abstract, abstract, articles, programs, etc.

The project requires a sound structure. To structure must meet the following requirements:

-the reasoning is taken to the research topic, its rationale;

-practical, theoretical, cognitive significance of the problem;

-identify and discuss problems and methods of research;

-independent work of participants on solving creative tasks of the project (individual or group);

-discussion and analysis of the obtained data in groups, seminars;

-presentation of the results, their presentation, protection, opposing;

-the formation of conclusions, the appearance of new problems.

Analysis activity students create projects, suggests that this method teaches students to successfully select the necessary information from different sources and analyze it;to summarize the data obtained in accordance with the set of problem whose ass;to nominate a reasonable hypothesis for its solution; to make reasoned conclusions;to build a system of evidence.

Practice shows that the application of this method stimulates the interest of students to the problems associated with the profession, it ensures the unity of theoretical and practical training, students are convinced of the need for the development of creative independent thinking and the acquisition of skills in design and simulation.

Effective developments of creative independence are imitation and simulation games that we used during the practical sessions. Preparation for role-playing and business games gives students the opportunity to make independent decisions when selecting the difficulty level of the job requires the ability to Express and defend their own point of view, to show independence in the actions and behavior during the game. Students are offered such games

and activities that require different levels of intellectual and creative activity. Here are some of them:

The game"the Battle of speakers". Job. Reproductive level

- prepare a short exciting story about their specialty Heuristic level - to prepare and come up with a small message on the original topic (specialty).

Search level - to prepare and defend a problematic speech (specialty).

Game "Presentation of new technologies". Job. Reproductive level - to get acquainted with one of the new technologies (training, education) and to deliver it. Heuristic level - to explore several new technologies on their basis to make a comprehensive methodology and to present the audience.

Search level - to develop and submit your own (copyright) technique (technology). Experience shows that student participation in the gaming simulation creates conditions for development of creative abilities of the teacher, to find independent solutions professional job. The main ways of gaming simulation pedagogical activity is micro teaching, socio-psychological training. Game modeling encompasses such forms of creative search as brainstorming, discussion. All this makes it possible to avoid teaching stereotypes, patterns, which is especially important in the formation of readiness of future teachers for innovations, innovative activity.

In conclusion, at present in Uzbekistan the preparation of specialists of higher qualification is given special attention. In the preparation of future teachers in higher education institutions of Uzbekistan is not only the world experience of modernization of the content, methods of training and education, but his own search for solutions.

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