

Analysis of the Results of Experimental Work on Forming Professional Competencies of Future Teachers in the Conditions of Design and Contexted Training

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Abstract: *The article presents the results of experimental work aimed at the formation of professional competencies of bachelors of pedagogical education in the context of project-contextual learning. " The article reveals the material reflecting the course of experimental verification of the conceptual model of the formation of professional competence and proving that the proposed system contributes to an increase in the level of training of students according to all criteria of the formation of professional competence of future teachers.*

Keywords: Competence-based approach, professional competence, experimental work, teacher-teacher, components of professional competence, interdisciplinary approach

In Uzbekistan, the issue of training pedagogical personnel in accordance with international requirements on the basis of advanced pedagogical technologies is acquiring particular relevance. In the context of modernization of education, giving priority to the principle "from theory to practice" requires future teachers to master the skill of creative activity [1:70]. The demand for active and proactive specialists with research competencies and knowledge of the specifics of research and innovation is constantly growing all over the world.

The purpose of the study consists of scientific substantiation and experimental verification of the effectiveness of the formation of important competencies of future teachers of vocational education in the context of project-contextual technology, identifying pedagogical ways of their improvement.

Experimental work was carried out at the Karakalpak State University, Urgen State University, Tashkent State Pedagogical University at the faculties of vocational education.

The experimental work was aimed primarily at checking the state of research activities in the university and predicting

the activities of students, for further training and their promotion in research activities. Also, the joint innovative activity of teachers and students not only contributes to the development of students' creative abilities, but also makes them in-demand specialists in the labor market.

Serious attention was paid to the group of future faculty teachers. At the stage of analyzing the implementation of the technology developed by us for the formation of professional competencies in the context of context-based project learning through the preparation of a future teacher for project activities. For this purpose, we have established the initial level of readiness of future teachers for project activities. To identify the initial characteristics of future teachers, we developed a comprehensive diagnostics consisting of a map of observations and a questionnaire, in which the assessment and self-assessment of readiness for project activities were made.

Experimental work on the research topic is organized as follows: sociological surveys were conducted with respondents; a questionnaire that allows assessing the level of theoretical knowledge of the teaching staff of secondary schools in the field of innovation.

Work tasks and research methods at the first motivational stage of the formative experiment

Stages	Stages of tasks	Investigation tasks		Investigation methods	
		Diagnostics	Transformations	Diagnostics	Transformations
Motivation	1. To include students in educational and cognitive activities, a reference point for reflection, search for solutions to pedagogical problems.	1. To include students in educational and cognitive activities, a reference point for reflection, search for solutions to pedagogical problems.	1. Formation of motivation as a direction for pedagogical design; skills of reflection at lectures and seminars.	1. Observation, questioning, conversation, testing, analysis of micro-research results	1. Constructed training situations requiring assessment and self-assessment.
	2. Offer the future teacher information about pedagogical projects	2. Studying the nature and completeness of the responses of future teachers to the doer at the cognitive level	2. Formation of knowledge about the essence of the features of the pedagogical project in lectures and seminars	2. Observation, questioning, analysis of judgments	2 Construction cognitive situations

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3. Include future teachers in the development of pedagogical design skills	3. Study of the level of proficiency in pedagogical project skills.	3. Formation of skills of analysis of pedagogical situations, detection and formulation of problems	3. Analysis of design assignments, observation, conversation.	3. Constructing design situations.
4. To create conditions for the formation of a creative orientation of pedagogical activity	4. To create conditions for the formation of a creative orientation of pedagogical activity	4. Formation of the creative orientation of pedagogical activity	4. Analysis of the implementation of individual those creative assignments, observation, conversation.	4. Constructing creative situations.

In the course of the experimental work, the formation of all components of readiness for project activities was projected simultaneously, while some of them had a priority value at each stage of preparation, having the potential to implement the assigned tasks. [5] We took into account the fact that traditional lecturing will not give the expected result, and therefore all classes were conducted in accordance with A.A. Verbitsky's contextual learning technology described by us in paragraph 3.1. [3: 207]. Therefore, the topic of the lecture was formed as a problem that needed to be solved. (appendix), for example, when studying the topic "Pedagogical activity, its characteristic features and characteristics", the teacher actualizes the problem "What roles should a teacher play in a professional college today in order to help streamline the project environment?" This problem was solved in communication - dialogue when discussing such issues: pedagogical activity as an educational service, expanding the range of educational services.

The need to include knowledge about pedagogical innovations in educational and cognitive activities (the second task) was determined by a number of considerations. First, the data of the diagnostic stage recorded their insufficiency in future first-year teachers; secondly, the need for this knowledge arose among the future teachers of the experimental groups already at the initial stage of the

experiment; thirdly, we believed that in the process of preparing future teachers for project activities, knowledge about the essence and specifics of pedagogical design, its foundations, should contribute to the awareness of the motives that determine the need to change, transform oneself and one's activities [2: 103].

The implementation of the third task of the stage was facilitated by a problematic, contextual-technological approach to the organization of knowledge. Interaction in this kind of situation included the exchange of acts of the type: the teacher begins the analysis of the pedagogical situation - future teachers continue and finish it. When organizing and conducting experimental work, the principles reflecting the main elements of research activity were taken into account [4].

The logic of the experimental work required to pay special attention to the formation of the creative direction of the activity of future teachers of vocational education. The didactic search for the content and methods of project orientation led us to the need to discover the skills of project activity and the choice of methods for their formation. To master this group of skills, we used the construction of creative learning situations. The process of mastering the experience of project activities was carried out in sequence:

The process of forming professional competence in the context of project-context technology

Elements of design activities	Designing educational situations
Analysis of pedagogical situations and decision-making - characterization and assessment of the situation, weighing and making final decisions, choosing one from several decisions.	The situation can be analyzed in the course of a discussion organized by the teacher. The purpose of such discussion and debate is to identify their personal attitude to this problem and to determine possible ways to solve it, based on the pedagogical situation.
Forecasting - predicting possible events, or referring to the past, making assumptions about events that might take place.	Work on situations: future teachers of vocational education need to express hypothetical consequences of certain events, both in the field of education and in the social sphere.
Micro-design - selection of means for the implementation of an idea, characterization of possible difficulties.	Fragments of educational texts are distributed to prospective teachers and are invited to underline words in them that may not be understood by vocational education students

At this stage, a creative search was organized on the basis of detection, formulation, problem solving during the discussion and didactic games.

Criteria and levels of formation of professional competencies of future teachers in the context of project-contextual learning

Criteria	Уровни готовности		
	1. Motivated	2. Partially motivated	3. Non-motivated
IMotivatio nal	A pronounced interest in pedagogical projects, understanding of the need for new introductions; striving to take an active position in	Understands the need, is situationally interested in pedagogical projects, situationally takes an active position	Understands the need, but does not feel interest in them, takes a passive position.
II	1. Full	2. Partial	3. Over

КОГНИТИВН ый	Systematically operates with knowledge about pedagogical projects, and their types	Fragmentary knowledge about the essence of the types of pedagogical projects	Fragmented, partial knowledge of pedagogical projects.
III Technic al	1. Mastered	2. Partially mastered	3. Not mastered
	Fully possesses the ability to detect formulate pedagogical. problems, search the literature	Has individual design skills: formulates a problem only with the help of a teacher	Doesn't know how to detect problems, finds it difficult to formulate them
IV Reflexive	1. Mastered	2. Partially mastered	3. Not mastered
	Possesses the skills of analysis and introspection of his own activities (adequate self-esteem)	Does not always analyze and self-analyze his own activities.	Does not possess reflexive skills, self-esteem is not always adequate.

After the end of this procedure, a discussion of the course of the game, the correspondence of solutions to the "portraits" of a modern teacher, the semantic load of certain questions takes place. Evaluation of the effectiveness of the technology of formation of readiness at this stage was carried out according to the results of a questionnaire, the implementation of diagnostic tasks, when analyzing the solution of educational situations by future teachers.

Level of Knowledge

Level of knowledge	Totally correct answers
Lower	1-10 (lower 54%)
Medium	11-14 (55-70%)
Higher than medium	15-17 (71-85%)
Hign	18-20 (86-100%)

In order to determine the level of knowledge of students at the cognitive stage, the course "Professional Pedagogy" was chosen. We propose to organize the educational process taking into account the characteristics identified in the experimental group of future teachers.

Based on the analysis of the initial situation, work tasks and methods of diagnostics and transformation were formulated at the second cognitive stage of the study. To accomplish the first task, we have developed two lectures:

- №1. Basic concepts of pedagogical design;
- №2. Pedagogical design as a technology for the development and implementation of pedagogical projects.

Both of these lectures were read by us after the participation of the majority (42 people) of future teachers of the 2nd year of the Faculty of Professional Education in the city scientific-practical conference "The effectiveness of pedagogical innovations in the educational process of the school."

The second lecture "Pedagogical design as a technology for the development and implementation of pedagogical projects" was supposed to consider the following issues:

- 1) The structure of the teacher's project activities.
- 2) Pedagogical design and its connection with pedagogical tasks in education.
- 3) Designing solutions to pedagogical problems. Pedagogical project as a substantiation of the desired state of the object, its structure, result.

Continuing preparation for project activities at this stage, we considered it necessary when studying the topic "Methods of pedagogical research", along with traditional questions, to consider the following:

- 1) The essence of pedagogical diagnostics, its importance in the educational process.
- 2) Methods of pedagogical diagnostics, diagnostic technique.

As a learning task, future teachers were asked to develop a diagnostic program that can be used to develop specific pedagogical projects. To complete this task, the future teacher had to choose a problem that he considers important for solving in pedagogical design on the basis of his learning experience.

When evaluating the results during and after the completion of the discipline, we noted an increase in the confidence of future teachers in: motives that encourage them to be interested in pedagogical projects, to master them; in self-esteem and introspection. Along with this, developing the project, future teachers not only relied on the knowledge and skills acquired in this course, but also used the opportunity to show their subjectivity, self-realization; 204 students developed projects as their own, original solutions to pedagogical problems. Creating the conditions for mastering the experience of creative activity at this stage, we identified the need to develop educational situations of a creative type, involving the solution of problems-problems that require resourcefulness, quick orientation, the ability to choose a non-standard solution. For this purpose, a number of pedagogical tasks were selected, for the solution of which we used the so-called "case method" (situations).

Thus, the project-context technology implemented in the dissertation, integrating context and project technologies, proceeding from the characteristics of each period of study of students in higher educational institutions in the study of pedagogical disciplines, confirms the effectiveness and purposefulness of the model of the formation of the professional competence of the future teacher of vocational education in the context of project-contextual technology, which determines the acceptability and significance of this model for pedagogical education.

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