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**THE ESSENCE OF EXPERIMENTAL WORK ON IMPROVING THE  
PROFESSIONAL COMPETENCE OF FUTURE TEACHERS ON THE  
BASE OF HISTORICAL THINKING**

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**Abstract.** *This article discusses the nature of the experimental work on improving the professional competence of future teachers based on historical thinking. The article also comments on the progress of the experimental work and its practical results.*

**Keywords.** *scientific hypothesis, experimental work, objective reasons, scientific-pedagogical tasks, historical event, historical thinking.*

Experience is the basis of any research. With the help of experimental work or pilot-test work, in order to find a solution to the researched problem, the correctness of the scientific hypothesis put forward, its compatibility with practice, practical-methodological value is checked. Methodologically correct organization of experimental work is more complex and difficult than describing the theoretical description and methodology of the problem in conducting scientific and pedagogical research. After all, the organizational-methodologically correct and rational organization of experimental work guarantees the success of the research. Sometimes there are also cases where the idea of a scientific hypothesis, which is supposed to provide a solution to the selected problem, does not correspond to practice, so the research ends ineffectively and without results. In scientific circles, there is a view that "the fact that the scientific hypothesis of the research is not confirmed in the experiment is the result itself." Indeed, it is. Because the fact that the scientific hypothesis is not confirmed in the experiment automatically requires the need to change its ideas. Experience confirms that the initial ideas of the scientific hypothesis do not correspond to the situation manifested in practice.

There are a number of subjective and objective reasons behind the non-confirmation of scientific hypothesis ideas in experimental work. In social sciences, in particular, in the fields of pedagogy, psychology and sociology, the non-confirmation of scientific hypotheses in experiments is often associated with subjective reasons. Because these fields are not carried out in laboratories and test areas, which require special equipment, but in educational institutions themselves.

Objective reasons that lead to the non-confirmation of scientific hypotheses in the field of social sciences - the time set for the organization of experimental work in experimental areas does not correspond to the educational plan of the educational institution, the





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competence of future teachers on the basis of historical thinking during the educational process; study the effectiveness of special methodology; analysis of experimental results.

When performing assigned tasks:

1. The leading idea of experimental work is to study foreign and local experiences, work with the text that teachers of history need to achieve in the educational process, be able to plan, identify archaic words and interpret them, base defining concepts and restating the educational material based on them, grouping basic concepts according to their logical unity and their place in the consistent coverage of historical events, dividing information about one type of historical event, phenomenon and processes into categories, providing complete information development of professional competence qualities such as analyzing educational material, solving problematic situations with historical content, comparing one type of historical event, phenomenon and processes, as well as expressing educational information rich in textual information in a visual form was defined as a leading idea.

2. Evaluating the importance of the articles of the "Law of Hammurabi" for the preparation of methodological developments (an indicator evaluating the importance of the articles of the "Law of Hammurabi" was developed in the framework of the topic), "From the history of the first statehood of the ancestors of the Uzbek people", "The laws of Timur", "The government of the Turkestan Autonomous Region and his activities", "Common and different aspects of the courage of national heroes", "The art of the courage of national heroes", "Feudal and capitalist systems description", "Social situation of Kokan Khanate and Bukhara Emirate", "East and West Renaissance "Characteristics of the period", "Essence of World Wars I and II" were selected.

3. Effective in improving the professional competence of future teachers on the basis of historical thinking, project and problem-based education types, "Brain-ring" form of education, as well as the ability to study experiences, work with text, and plan, defining archaic words and interpreting them, defining basic concepts and restating the educational material based on them, grouping basic concepts, dividing information about one type of historical event, phenomenon and processes into categories, analyzing the educational material, historical topics methods such as solving problem situations, comparing one type of historical event, phenomenon and processes, as well as visualizing educational information rich in textual information were chosen.

During the research period, the trial work, which is an important structural element of it, was carried out in HEIs selected as experimental areas. The following higher education institutions were selected as experimental sites: Andijan State University (Andijan DU), Kokan State Pedagogical Institute (Kokan DPI), Jizakh State Pedagogical University (Jizakh DPU).



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One of the elements that is important for experimental sites is the determination of the number of students involved in the test work. Based on this, the following number of students were involved in the trial work on the experimental areas (Table 1):

Table 1

**The number of students involved in the trial work at the experimental sites**

<b>№</b>	<b>Fields of experience</b>	<b>Number of students involved in the testing process</b>
1.	Fergana SU	110
2.	Kokand SPI	122
3.	Jizzakh SPU	114
	Jami	346

It is known that experimental work in the field of pedagogy is carried out with the help of two groups - experimental and control groups. The reason for this is to evaluate the practical value, appropriateness and compatibility of the special program for improving the professional competence of future teachers based on historical thinking, which is recommended for pedagogic practice and tested in experimental groups.

The experimental work of the research aimed at improving the professional competence of future teachers based on historical thinking was organized using a number of methods. Among them, the following methods took place: sociometric methods - questionnaire, conversation, interview, test, working with documents (documents related to the diagnosis and evaluation of students' knowledge), pedagogical observation, modeling, expert evaluation, mathematical-statistical method. When using these methods, their didactic potential was directed to the realization of the general goal of research. In particular:

1. Using the questionnaire method, students' historical thinking and professional competence were studied in the cases before and after the test work. Questionnaires, each containing 10 questions, were developed separately for students and practicing teachers involved in the trial work.

2. The interview method was implemented with the respondents of the experimental groups. In the context of these conversations, the issues of development of historical thinking, qualities of professional competence characteristic of history teachers and their mastery were highlighted. For interviews, "Factors that develop historical thinking", "Historical inheritance is a guarantee of the future of the nation", "Knowing one's ancestors, awareness of the history of the dynasty develops historical consciousness in a person?", "What is preserved in your childhood memory?", "Which periods of the history of Uzbekistan are glorious history?" do you recognize as?' topics such as



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3. The interview method served to achieve the goal of studying the use of teaching forms and methods for the development of professional competence of future teachers on the basis of historical thinking in the educational process, their importance for students. The interview was organized on the basis of the following questions: "Which assignment did you like working with?", "Did you have difficulties working with archaic words and interpreting them?", "What competencies did the assignments related to analysis and solving problem situations develop in you?", "What topics would you suggest for comparative study?", "Tell me, what interactive methods would you personally use in visualizing educational materials related to history?".

4. In modern education, the test method is a method that determines the knowledge, skills and qualifications of students in the relevant field and allows to evaluate them based on it. In conducting the research, students' answers to the test tasks developed in history were studied. Therefore, the basis of historical thinking is directly formed by students' understanding of a specific field, assimilation of knowledge.

5. The method of working with documents helps to determine and evaluate students' mastery of historical subjects directly with the help of educational documents. After all, such documents, in essence, diagnose students' knowledge. The results of the diagnosis allow to determine (evaluate) the level of their knowledge.

6. Pedagogical observation method served to directly and indirectly study students' activities in the learning process. This determines the didactic advantage of the method. Therefore, if direct observation helps to objectively assess students' educational activity, indirect observation also serves to determine the relationship of another subject (practitioner-teachers in this case) to the learning process.

7. The modeling method is another important method of modern education. This method was used to create a model of the educational process in the organization of experimental work. In addition, a model for improving the professional competence of future teachers based on historical thinking was created based on the results of experimental work and the ideas of theoretical analysis.

8. The method of expert assessment is also becoming more and more popular in modern education. This method was used in order to evaluate the didactic importance of educational tasks, selected methods, as well as "Comparative history" and "Visual history" technologies based on the author's idea of the researcher to improve the professional competence of future teachers based on historical thinking.

**9. Mathematical-statistical method** of pedagogy, psychology and sociology

it is used for the purpose of analyzing the results of the researches carried out in the directions and evaluating their practical value. Bepalko, Student, Fisher, Student-Fisher criteria (methods) are used for mathematical analysis in the research conducted in the field of pedagogy. The Student method was chosen for the analysis of the results of this study.



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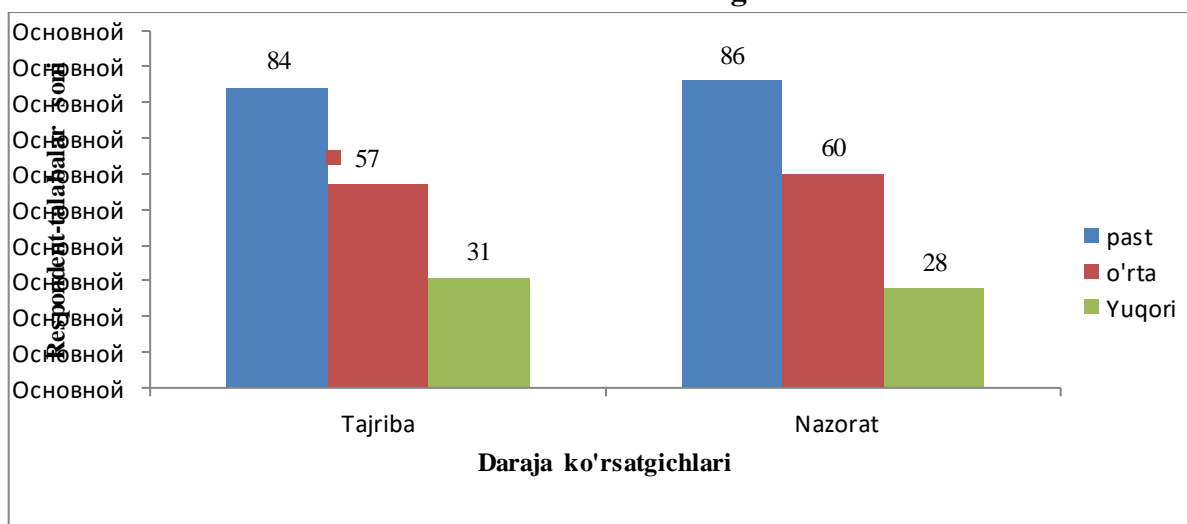
In pedagogical research, the results of experimental work are evaluated by studying the difference between the results of substantiating and emphasizing experiments. For this reason, it was studied to what extent the results of educational activities of the respondent-students assigned to the experimental and control groups corresponded to the criteria developed above and the indicators based on it (Table 2):

**Training of respondents of experimental and control groups  
results on assignments (emphasis experience)**

Groups	Number of respondents	Evaluation indicators (by levels)		
		High	Middle	Low
Experience	172	47	82	43
Control	174	34	61	79

Based on the data shown in Table 1, it can be said that at this stage of scientific and pedagogical activity, there are significant differences between the experimental and control groups in determining and evaluating the current level of the respondents according to the established criteria and indicators. Although the corresponding table indicators show that there is a difference between the two groups, the presentation of the data on the results in a diagram serves to express this difference more clearly. Therefore, the following histogram was created according to the results of the substantiating and emphasizing experiment (histogram 1 and 2):

**Respondents of experimental and control groups  
results of educational assignments**

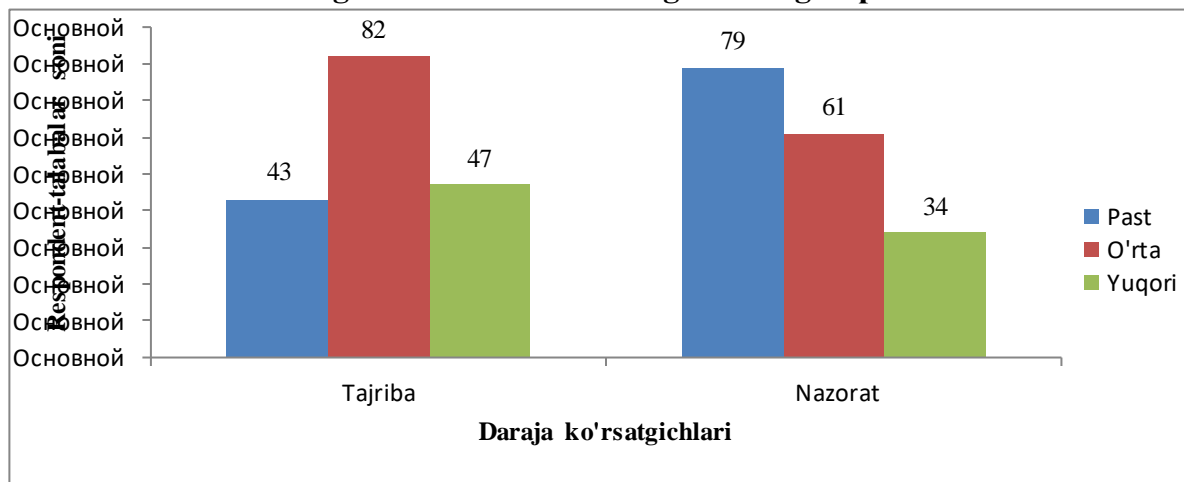




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**Histogram 1. Results of the grounding experiment**



**Histogram 2. Emphasis on experimental results**

The visual appearance of the histograms in the course of the test shows that the results recorded by the respondent-students in the experimental and control groups regarding the performance of educational tasks on historical topics are evidence of a serious difference in experience. Therefore, it can be said that the special methodology developed for the purpose of improving the professional competence of future teachers based on historical thinking is compatible with educational practice and contributes to the successful fulfillment of the social order regarding the training of pedagogical personnel.

**CONCLUSION**

Organizational-methodically correct organization of experimental work carried out within the framework of research creates a basis for a positive solution to the research problem. Therefore, clearly defining the purpose of experimental work, educational tasks that guarantee its achievement

In this case, the main attention should be focused on clearly defining the goals and tasks of experimental work, choosing effective methods. Organizational and methodical organization of experimental work, creation of necessary pedagogical conditions allows effective application of the methodology recommended for testing in educational practice.

Based on the results of the experimental work, it can be said that working with the text, identifying and interpreting archaic words, distinguishing basic concepts and re-statement of the topic based on them, grouping, categorization, etc. are professional competence based on historical thinking. develops qualities.

The results of the stressing experiment ensured that its indicators were 20% higher than the results recorded in the control groups due to the use of a special methodology in the experimental groups.



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