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OPPORTUNITIES TO USE PROJECT-BASED TEACHING TECHNOLOGY IN THE DEVELOPMENT OF STUDENTS' RESEARCH COMPETENCE

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ABSTRACT

The article highlights the essence of student's research competence, the features of project-based learning in its development, as well as the possibility of using project-based learning technology in the process of theoretical training and qualification practice.

KEYWORDS: *Scientific Research Competence, Project Training Technology, Theoretical Training, Qualification Practice.*

INTRODUCTION

In the current context of globalization, one of the main tasks of higher education institutions is to train cadres which possess up-to-date knowledge and are independent-minded, scientifically and pedagogically competitive, as a solution for this, increasing the effectiveness of research work in higher education, the targeted orientation of students to conduct research remains an urgent pedagogical issue.

In this regard, a number of decrees and resolutions have been signed by President Sh.M.Mirziyoyev. In particular, the Decree PF No.5847 on October 8, 2019 on the "Concept of development of the higher education system of the Republic of Uzbekistan until 2030" pays special attention to increasing the efficiency of research in higher education, attracting young people to scientific activities, the formation of innovative science infrastructure [1, 3].

Scientific research is the process of developing new knowledge, one of the types of cognitive activities. It is characterized by objectivity, reliability, accuracy. Scientific research, when repeated under all conditions, must always give the same result, proving the point in question. Scientific research consists of two interrelated parts - experiment and theory. The main components of scientific research: definition of the topic, pre-analysis of existing information, conditions and methods in the field of research, scientific hypotheses, experiments, analysis and generalization of results, verification of hypotheses based on evidence, expression of new facts and laws, scientific prediction. It is common to divide scientific research into fundamental and applied, quantitative and qualitative, unique and complex research. The methods and practices of scientific research are widely used not only in science itself, but also in solving many economic and social problems [2, 121].

Scientific research consists of a set of goal-oriented creative actions of human mental activity. The purpose of this activity is to study and discover new scientific knowledge about an event or process, to improve it and to apply it in social life [3, 22].

Scientific research activities provide practical assistance to self-awareness, self-evaluation, that is, if a person wants to be a real scientist, he must manage his passions and aspirations, make rational, effective and optimal decisions, engage in heuristic activities that serve goodness. The result of such activity is manifestation as discovery, creativity. This situation opens up new possibilities in the analysis, understanding and evaluation of scientific and creative activity. In this context, a more in-depth study of the approaches to the research process will help to find its specific features [4, 4].

Students' research activities are one of their individual forms of work. This is the most important part of the training process for future professionals. Individuality ensures the activation of the intellectual activity of the student, the independent acquisition of knowledge, the development of creative abilities, the formation of professional skills, the formation of professional skills of the future specialist [5, 194].

Through the content of education, students should be equipped with knowledge, skills and competencies about the essence of research, algorithms, methods and tools of the research process. In shaping the competence of students to conduct research, we first tried to study the pedagogical potential of the educational content (qualification requirements, curriculum, science programs). It should be noted that the classification of professional competencies specified in the qualification requirements does not include research activities, only the subject of "General Pedagogy" taught at the undergraduate level is limited to one topic of research in the standard subject program.

Organizing the learning process through active and interactive learning, being able to see and solve problems, work on educational projects, perform tasks of a heuristic and creative nature is an important condition for the formation of research competence in students. Independent forms of education in most disciplines do not reflect the research nature, which leads to difficulties in the implementation of course work and graduate project work.

As part of our research, a survey was conducted among students of 1-4 courses of Fergana State University in the areas of "Pedagogy and Psychology" and "Primary education and sports

education" to determine their readiness for research work (112), in which the following questions were asked:

1. What research did you do at school? What results did you achieve? Give examples?
2. Do you want or are you doing research in scientific circles at the university?
3. Describe "research activities".
4. Describe "Project Activities".
5. What is the difference between research and project activities?
6. What topics of research and project work do you think are the most relevant and interesting today?
7. Please finish the sentence: "If research and project work with students will be successful."
8. Do you want to do project and research work (or study for a doctorate) after graduating from university?
9. How many points would you rate your readiness to conduct personal research from 1 to 5 points?
10. How many points would you rate your competence to conduct personal research from 1 to 5 points?

Only 37% of students surveyed answered "yes" to the first question of the survey, and only 19% published articles in newspapers before entering university. Only 30% of students want to study science (or do research in academic circles), 20% answered "no" and 50% found it difficult to answer. Only 30% of students (when asked for definitions of "Research Activity" and "Project Activity") were able to give an acceptable definition of the concepts of research and project activity (no one gave a clear definition). This is definitely a very low figure.

The results show that the competence of students of higher education institutions to conduct research is not sufficiently formed. One of the main reasons for this is that students do not have enough understanding and skills about scientific research. This creates a need to improve the system of formation of competence in conducting research among students of higher education institutions.

As a result of many studies, we have been convinced that project-based learning technology is one of the technologies to effectively develop students' research competence.

Project education opportunities for students in the development of the main components of research competence (value-based approach, project-creative, subjective-transformational, control-correctional) are wide, integrating professional, research and educational activities of future professionals, developing a project attitude to their personal lives teaches. This method involves the use of a set of methods such as research, heuristic, problem-solving, group work, as well as the integration of reflexive, productive, exploratory, creative and other modern methods. Project training is effective in the following cases:

- c• in systematic, one-time or long-term observations of certain psychological and pedagogical processes and events that require the collection of initial data to solve the problem;

- research or comparative study of a particular pedagogical phenomenon, process, fact, in making pedagogical decisions or making recommendations;
- in a comparative study of the effectiveness of solving the same or different problems to determine the most effective solution;
- in the joint development of an idea (practical or creative);
- when presenting a future project or its results.

As a result of our research, a model of continuous, step-by-step formation of research competence in higher education has been developed. Based on three levels of personality activity, developed by AM Novikov, we have divided the formation of research competence into three stages (situational activity, situational activity, creative activity). In addition, we envisage that project technology will implement projects at three levels:

- ✓ small (mini) projects (e.g. solving traditional learning problems) are suitable for first-level situational activity;
- ✓ large, medium-sized secondary projects (midi projects) corresponding to a strong situation, personal activity (for example: preparation of abstracts, reporting, game situation design, etc.);
- ✓ Large tertiary educational projects (maxi projects), relevant creative activity of the individual (for example, course and diploma work)[6,17].

Our analysis showed that there are specific features of the implementation of project-based learning technology, which depend on the type of training (theoretical, practical). In the process of theoretical education, through project activities, students perform small projects, ie learning tasks and tasks in the form of traditional education.

The research shows that in the process of passing theoretical lessons from course to course, it is necessary to develop students' independent work in project activities, strengthen interdisciplinary interdependence, strengthen ties with real life and professional practice.

The role of project education in the pedagogical practice of students is invaluable. The research showed that the main task of passive practice is to study in depth the research activities and experiences of school teachers, to implement projects such as "Methods and programs for studying the research activities of school teachers" by students. At the pre-internship conference it is expedient to make the study of methods and methodology of innovative pedagogical experience as a didactic requirement in the formation of research competence in students. For this purpose, we proposed to include in the composition of elective courses the course "Methods and methodology of scientific pedagogical research.

During the period of active pedagogical practice of research work, the main issue is large-scale projects of medium level (m: designing and conducting a problem lesson, preparation and organization of scientific-practical conferences among students, etc.,) preparation and implementation of high-level (course work, preparation and defense of graduate work).

In-depth study of the course "Methods and methodology of scientific pedagogical research" before the internship leads to an increase in research competence of students during the internship.

The considerations given above show that the use of project-based teaching technology in higher education influences the effective development of students' research competence. At the same time, the development of an organizational and pedagogical mechanism for the integration of teaching technologies as a condition for optimizing the competence of research leads to an increase in the quality of professional training of graduates.

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