Section A-Research paper ISSN 2063-5346



# **FORMATION OF RESEARCH COMPETENCE** OF UNDERGRADUATES IN THE LEARNING PROCESS

## **R.M. Kadyrova**

candidate of pedagogical sciences, Professor of the department of general pedagogy

### N.A. Yakubova

Tashkent State Dental Institute (TSDI), department of microbiology and pharmacology, candidate of medical sciences, senior lecturer.

### I.V. Morkhova

doctor of philosophy (PhD), acting assistant professor, of the department of general Pedagogy

**Annotation.** The article reveals the total content of research competence, the purpose of research activities is defined; the definition of scientific research competence is given; the components included in the research activity are characterized; the importance of competence in scientific communication, as well as the need for its formation among undergraduates in the process of their education in higher educational institution, is revealed.

**Key words:** research competence, cognitive, prognostic, organizational components; competence in scientific communication; educational competence.

In our region, special attention is paid to the training of scientific and pedagogical staff. Based on this, one of the main directions for improving the research competence of a modern specialist is his active participation in research activities, which stimulates and ensures the achievement of a high level of research competence. This activity, in turn, creates variable preconditions for a qualitative change in all professional activity.

Research activity acts as a meaningful psychological, technological, pragmatic and socioethical support for social progress. Its goal is to increase the efficiency of all types of activities and, at the same time, individual self-improvement of subjects implementing this research activity.

Consideration of the question of the essence of scientific research competence allows us to state that it consists of a number of related competencies and is described through them, characterized by the level of their formation.

"Competence" is defined as "possession of thorough knowledge and authority in any field", as "possession of competence", as "a special type of organization of subject-specific knowledge that allows making effective decisions in the relevant field of activity" (5).

The study of the structural-content field of research competence makes it possible to single out three competences that make up research competence. They are scientific competence, scientific communication competence and educational competence.

Scientific competence characterizes the state of professional scientific knowledge, the level of formation of scientific skills and abilities, which reflects the readiness of a specialist for research activities.

The cognitive component provides for the ability of active cognition. It is based on intellectual skills, which are a complex complex: understanding each part in connection with the whole and in interaction with other components; independent search for ideas, formulation of patterns and conclusions adequate to the logic of the phenomenon under consideration, etc.

The prognostic component includes knowledge, skills, abilities that provide foresight and preliminary assessment of research results, as well as design skills.

The organizational component is represented by knowledge, practical skills and abilities to implement a specific scientific process, experiment, experience, that is, possession of theoretical and empirical methods of research, as well as methods of mathematical and statistical data processing.

An important component of scientific research competence is the competence in scientific communication. Scientific communication, linking scientists to each other in their professional activities, forms their ability to establish and maintain scientific and professional contacts with their colleagues. It is a process of developing new information that is common for communicating specialists, which creates their commonality or increases its degree.

Competence in scientific communication has its own characteristic features, which are predetermined by the specifics of the sphere of scientific communication, that is, an accurate, logical and unambiguous expression of thoughts. The units of scientific thinking are scientific concepts and terms, and the linguistic embodiment of the dynamics of thinking is expressed in judgments and inferences.

Speech scientific interaction is not limited only to the communicative aspect. Speech unfolds in the conditions of a certain communicative situation, and the interactive and perceptual components of scientific communication acquire special importance.

The communicative component of competence in scientific communication is aimed at developing the skills of a clear, precise and logical presentation of thoughts, the ability to convince, build one's speech with arguments, oppose the interlocutor in the framework of scientific oral and written debate, etc.

The interactive component of competence in scientific communication is aimed at developing the skills of interaction of scientists in the process of professional communication. Effectively, interactive skills are formed in the conditions of professional and scientific interaction in situations of scientific communication.

The perceptual component of the competence of scientific communication is aimed at developing the ability to perceive and understand other people in scientific communication and includes the ability to perceive and adequately interpret information about signals from a communication partner received in the course of joint activities. This component is based on the ability to observe and empathize.

Possession of competence in scientific communication will allow the undergraduate - the future researcher to realize such functions as: informational, cognitive, communicative, impactful, ethical, interactive, translational.

A significant component of research competence is educational competence, which is aimed at developing the abilities of undergraduates and scientists to effectively manage their teaching and research activities, optimally and competently regulating its qualitative content and quantitative volume.

Within the framework of educational competence, the following components should be distinguished: self-organizing, reflective, and corrective-regulating.

The self-organizing component is represented by the knowledge, skills and abilities of clearly formulating research tasks and determining the most optimal ways to achieve them using various sources of information using Internet resources.

The reflexive component is an analytical and evaluation block, which includes the activity of understanding and evaluating the course and results of independent activity. This means that a master student should be able to identify positive aspects and shortcomings in his research work, compare the achieved results with the intended goals and objectives, really realize his capabilities, adequately plan and implement an experimental research program.

The corrective-regulatory component is aimed at the implementation of the tasks of selfstimulation, taking into account specific cases of failure in cognition, determining its causes, correcting, etc. The implementation of corrective-regulatory procedures is a complex and stepby-step sequence of actions, the qualitative implementation of which requires a certain level of training and experience in this area.

Possession of educational competence will allow the undergraduate to implement the following functions:

- Self-management of learning, which form the readiness for conscious and effective independent management of scientific and educational activities;

- Educational, focused on understanding the personal educational product, on building one's own knowledge systems, the formation of complexes of skills and abilities;

- Reflective, implying understanding, correction and accumulation of effective experience in self-education;

- Instrumental, characterizing independent learning as a social mechanism for managing and transmitting information necessary for the further development of scientific knowledge.

The total content of research competence allows us to assert that it is carried out through the productive activity of specialists in "... enrichment and development of world knowledge through an accurate objective and systematic study of the surrounding reality" (4). The formation of this competence is aimed at mastering the ability of a master student to effectively conduct research activities through the correct organization of the research process, productive analytical activity, the correct use of aids, etc.

#### Bibliography:

1. Gubaidulin A.A. Formation of research competence of students in terms of projectbased learning. PhD. Kazan 2011. – 19 p. 2. Khutorskoy A.V. Key competencies. Design technologies. [Text] // Public education. -2003 - No. 5. - P. 55-61.

3. Laptev V.V. Scientific approach to the construction of education quality research programs. Col. of scientific papers – St. Petersburg. Publishing house of the Russian State Pedagogical University named after A.I. Hercyn. – 2001.

4. Mareev V.I. Research activity in a pedagogical university: Theory and practice. Rostov-on-Don. – 1999.

5. Savenkov A.I. Psychological foundations of the research approach to teaching: Textbook, M.: "Os-89". – 2006. – 480 p.

6. Shavkatovich, B. R. (2017). Deduction of chemical thought. *European research*, (5 (28)), 62-68.

7. <u>https://scholar.google.ru/citations?view\_op=view\_citation&hl=ru&user=mzbOeBcA</u> <u>AAAJ&cstart=20&pagesize=80&citation\_for\_view=mzbOeBcAAAAJ:dhFuZR0502QC</u>.

8. <u>https://scholar.google.ru/citations?view\_op=view\_citation&hl=ru&user=mzbOeBcA</u> AAAJ&cstart=20&pagesize=80&citation\_for\_view=mzbOeBcAAAAJ:4DMP91E08xMC

9. <u>https://scholar.google.ru/citations?view\_op=view\_citation&hl=ru&user=mzbOeBcA</u> AAAJ&cstart=20&pagesize=80&citation\_for\_view=mzbOeBcAAAAJ:\_FxGoFyzp5QC.

10. Rasulov, A., Saparov, K., & Nizamov, A. (2021). THE IMPORTANCE OF THE STRATIGRAPHIC LAYER IN TOPONYMICS. *CURRENT RESEARCH JOURNAL OF PEDAGOGICS*, 2(12), 61-67.