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**PROFESSIONALLY ORIENTED SCIENTIFIC AND RESEARCH ACTIVITY OF STUDENTS
AS AN IMPORTANT COMPONENT OF COMPETENT SPECIALIST TRAINING**

Abstract. The issue of the development of research skills and the organization of research activities of students of higher education institutions is multifaceted. Currently, one of the leading global trends in university education is the integration of the research component into the process of training of future specialists. The purpose of the article: to consider the features of professionally oriented scientific and research activity of students. Research methods applied: theoretical analysis of scientific sources on the issue of scientific and research work as an important component of the training of higher education institutions students; critical and analytical analysis of concepts, theories, and methods. Professionally oriented research work includes observation, study of facts and phenomena of professional reality; awareness of professional issues, their analysis; developing a goal and setting tasks; proposing hypotheses, choosing research methods; theoretical problem solving; and evaluation of the obtained results by the goals set. The main functions of professionally oriented research activity are: social; intersocial; systemic; integrative; modeling; information; communicative; technological; motivational; developmental; and reflexive. The outlined content of the functions of the research activity allows us to distinguish and analyze certain personal qualities, as well as several research and professional knowledge, abilities, and skills. An important component of research activities is an emotional attitude to the R&D. The search for approaches to solving the task is additionally regulated by emotional assessments that are formed as a result of the task and can change repeatedly. Awareness of future professional activity is decisive: the activity of students in scientific research depends on how they imagine their profession and whether they consider the skills of research work as a component of specialist competence. A necessary quality of researchers is sociability and independence.

Keywords: institution of higher education, scientific and research activity, scientific research, skills, students.

Introduction. One of the defining trends in the development of education, functioning in the conditions of radical changes in the social, economic, and political spheres, is the increased attention to the training of specialists-researchers and / or specialists-analysts, ready to carry out scientific and research activity. These are professionals capable of forming new ideas, making non-standard decisions, ready to actively participate in innovative processes, and competent in solving research tasks.

This actualizes the search for ways to form a new type of educational system. In this regard, the requirement to include scientific and research activities (R&D) of students in such forms as research, design, forecasting, etc in the

educational process is obvious. The specified approach determines the process of specialists training in institutions of higher education of a scientific and research nature and determines the directions of the organization of their educational and educational activities.

Analysis of recent research and publications. R&D is a socially significant and economically expedient component of human activity, as it ensures promising development of the economy, enriches culture and determines social progress. The degree of use of scientific knowledge in pedagogical activities is determined by social significance, practical effectiveness, and spiritual value.

The requirement for research training of higher

education students is specified in the Law of Ukraine on Higher Education, where the main tasks of training specialists in higher education institutions include: "implementing scientific activity by conducting scientific research and ensuring the creative activity of participants in the educational process"; "ensuring an organic combination of educational, scientific, and innovative activities in the educational process" [1].

Scientific research is understood: as a process; as a special type of cognitive activity during which previously unknown facts on the object under research are revealed; as a result of this activity – a scientific activity [2]. Depending on the significance of the tasks to be solved, the concept of scientific research is presented as a solution to a scientific problem.

Researchers interpret scientific research as an original discovery that generates new knowledge. The term "scientific research" also implies the discovery of new aspects of existing knowledge [3].

V.Martsyn et al. define "scientific research" as purposeful process of production of new knowledge, which reveals new phenomena in society and nature to be used in practical activities of people [4].

A.Konversky defines "scientific research" as a special type of human activity, which is aimed at acquiring new, deeper, more accurate knowledge that serves, as a rule, practical purposes for creating new or improving old knowledge that an individual has acquired during lifetime [5, p.77].

F.Kerlinger offers the following definition: "Scientific research is a systematic, controlled, empirical and critical study of hypothetical assumptions about probable natural phenomena" [6, p.27].

According to D.Woodhouse, "research activity is intellectually controlled scientific research, which involves obtaining knowledge through the discovery and systematization of new information or the development and improvement of existing information and experience" [7, p.42].

Since scientific research is characterized by the personal qualities of the subject of knowledge, and its result contains scientific novelty and social significance, then by scientific research, we understand the type of human activity aimed at the production of new knowledge of a general and evidential nature.

Professional training involves the active R&D of students during their studies at a higher education institution.

The **aim** of the research is to consider the features of professionally oriented scientific and research activity of students.

Methods of research: theoretical analysis of scientific sources on the issue of scientific and research work of students as an important component of their training in the system of higher education institutions; critical and analytical analysis of concepts, theories, and methods.

Results and Discussion. R&D of students is a system of methods, means, and measures for assimilation by students during the learning process of various stages of the scientific and innovative cycle, which includes fundamental and applied research. R&D is one of the most important means of effective training of specialists through

mastering the basics of professional creative activity, methods, techniques, and skills of performing scientific and research activity, developing creativity, independence, and the ability to quickly navigate socio-economic situations.

R&D is understood as search activity, expressed in independent creative research. Such activity is aimed at explaining phenomena and processes, establishing their connections and relationships, theoretical and experimental substantiation of facts, and identifying regularities using scientific methods of cognition [8].

Y.Chernyonkov [9] distinguishes three groups of basic research skills in the structure of R&D of students:

- general theoretical: to analyze theoretical phenomena; to summarize the problem under research; to apply theoretical knowledge in practice; to find a scientific solution to the problem;

- methodological skills: to conduct an experiment; to apply methods of scientific research; to build a system of operations, and research;

- technical skills: to make use of bibliographic catalogs; to illustrate tables and diagrams; to cite sources; to draw up research work.

Ya.Logvinova [10] singles out two interrelated elements in the R&D of students: learning the elements of research activity, organization, and methods of scientific creativity; scientific research carried out by students under the guidance of educators.

N.Uysimbaeva [11], considering the scientific research work of students as one of the forms of cognitive and creative activity, believes that R&D ensures the formation of intellectual activity, which is a component of the professional competence of future specialists.

The main goals of R&D are to improve the quality of professional training and to form the future specialist's ability to think independently and creatively. In general, these can be formulated as:

- development of a complex of research, experimental and theoretical knowledge, skills and competencies in the future specialist;

- forming of dialectical logic, scientific thinking, and the professional and cultural outlook of a specialist through the integration of educational and scientific progress;

- creation of positive motivation and sustained interest in the specialty studied;

- instilling interest in research work and awareness of its social significance;

- development of public speaking skills, and participation in scientific discussions;

- modernization of professional training in the process of updating the content side of the educational standard, etc. [12; 13].

At the same time, such socially and personally significant qualities as readiness for decisive and purposeful actions, the desire for self-improvement and creative search, for increasing the efficiency and quality of activity, and for the use of interactive and information technologies acquire special value. Students' research work becomes a means of developing their creative potential, a gradual transition from education to self-education; turning a student into an active subject of the educational process, capable of acquiring knowledge, mastering skills and creatively applying them to solve cognitive and practical

tasks.

In our opinion, the preparation of students for the R&D in the conditions of a higher education institution is to take place in the form of a system that would provide for educational and scientific activities, student scientific research, as well as the implementation of forms, methods, and pedagogical conditions aimed at forming students' motivation to carry out scientific research based on the individualization of the educational process.

Let's consider the features of professionally oriented research work. According to O.Povidaichyk [14] professionally oriented research work includes observation, study of facts and phenomena of professional reality; awareness of professional issues, and their analysis; developing a goal and setting tasks; proposing hypotheses, choosing research methods; theoretical problem solving; evaluation of the obtained results in accordance with the goals set.

If the goal of independent scientific research activity is cognition and research of objective reality, the search and generation of new knowledge, then the main goal of professionally oriented R&D is the progressive development of the profession itself. An independent R&D studies information that goes beyond the current knowledge of the subject of activity and is mostly unknown, and new. The professionally oriented R&D studies real objects of the professional sphere. The result of independent R&D is the generalization of existing information or the creation of new knowledge. With the professionally oriented R&D, it is the creation of material products. The main motives of the first are cognitive, of the second – professional interests and needs.

Summarizing the scientific approaches of scholars, we understand professionally oriented R&D as a special type of intellectual and creative activity that arises as a result of the functioning of individual mechanisms of search activity and involves independent research aimed at the theoretical and experimental study of phenomena and processes of a certain professional sphere, substantiation of facts, identification of regularities using scientific methods of cognition.

Based on the view of O.Povidaichyk [15], we consider the main functions of professionally oriented research activity.

– Social function – the sphere of formation and self-development of future specialists. It determines the value-ethical orientation of the profession, reveals its social aspects, and determines the dependence of the purpose, the content of research, motives for participation in it on socio-economic conditions, and the specifics of production tasks. It ensures the formation of professional competence and self-awareness of specialists taking into account their personal and professional needs.

– Intersocial function – is related to the objective patterns of macrosocial development of society, in particular, globalization, social inequality, demographic and environmental problems, etc. Through the content of this function, the intersocial activity of a future specialist is revealed. In the conditions of dynamic development of society, real professionals are to refer to the world experience and distinguish from it all the progressive things that are created in the professional community at the level of theory and practice. The discovered knowledge is

to be appropriately adapted to the national reality and traditions of the country (region), for this, adequate tools for the practical implementation of new approaches and methods of their implementation in practice are to be selected.

– Systemic function – a systemic factor that determines the relationship and interdependence of all components of the pedagogical system. This function acts as a regulator of knowledge at all levels (theoretical and empirical), which collectively ensures the purposeful and dynamic development of a holistic education system. This function implementation of research activities involves methodological literacy, the constant improvement of theoretical knowledge and research skills, as well as the formation of research culture as a component of professional culture, which reflects the systemic relationships of all components of the pedagogical system.

– Integrative function – is aimed at changing the content and structure of modern scientific knowledge, accumulates the intellectual and conceptual capabilities of individual sciences by achieving the unity of knowledge in the content, structural, logical-epistemological, scientific-organizational, and methodological aspects.

– Modeling function – represents an opportunity to expand activities by solving the tasks of objects managing from the system, complexity, and integrity standpoint.

– Information function – involves the development of a system of scientifically based knowledge on the system functioning; provides effective broadcasting and reproduction of the activities of innovative scientists, and specialists in related fields of knowledge; provides favorable conditions for the development of a certain professional sphere of implementation of modern information technologies.

– Communicative function – ensuring professional communication through the exchange of research activities results, allowing varying the content and forms of communicative interactions in the professional environment, to achieve social community while preserving individuality. This function ensures the implementation of partnership principles in research activities and practice.

– Technological function – ensures the transformation of modern theories of the development of society and man into technology using the integration of the specialist's research activities and work experience; involves the preparation to perform professional activities aimed at obtaining knowledge from various sources, transferring and transforming work experience.

– Motivational function – provides an opportunity to use the means of research activity to stimulate the motivation of the purposeful cognitive activity of a specialist, which reflects ethical obligations (to students, the professional community, and society as a whole) to develop effective activities.

– Developmental function – promotes the use of methods of research activity for the development and activation of reflective forms of thinking and creative activity.

– Reflexive function – determines the ways of formation of a specialist who is aware of the trends in the development of activities and makes all the necessary changes to master professional competence and improve

qualifications.

The outlined content of the research activity functions allows us to distinguish and analyze certain personal qualities, as well as several research and professional knowledge, abilities, and skills. An important component of research activities is an emotional attitude to the R&D. The search for approaches to solving the task is additionally regulated by emotional assessments that are formed as a result of the task and can change repeatedly. Awareness of future professional activity is decisive: the activity of students in scientific research depends on how they imagine their profession and whether they consider research skills as a component of specialist competence. A necessary quality of researchers is sociability and independence.

Conclusions. The research activity of students in educational institutions is defined as an intellectually controlled activity, carried out individually or in a group, related to the solution of a research task. This leads to the discovery of new knowledge, further forecasting the consequences of this solution, which implies the presence of basic qualities and the researcher's competencies (independence, social responsibility, ability to cooperate,

self-education, critical thinking, analytical, and information literacy). The main result of this is an original intellectual product that establishes scientific truth as a result of scientific research and is presented in a standard form. The main functions of professionally oriented research activity are: social; intersocial; systemic; integrative; modeling; information; communicative; technological; motivational; developmental; and reflexive. The outlined content of the functions of the research activity allows us to distinguish and analyze certain personal qualities, as well as several research and professional knowledge, abilities, and skills. An important component of research activities is an emotional attitude to the R&D. The search for approaches to solving the task is additionally regulated by emotional assessments that are formed as a result of the task and can change repeatedly. Awareness of future professional activity is decisive: the activity of students in scientific research depends on how they imagine their profession and whether they consider research skills as a component of specialist competence. A necessary quality of researchers is sociability and independence.

Конфлікт інтересів. Автори підтверджують відсутність фінансових, особистих чи інших інтересів, що можуть розглядатися як потенційний конфлікт інтересів щодо публікації цієї статті.

Фінансування. Робота виконана за відсутності фінансової підтримки з боку будь-яких організацій.

Доступність даних. Це теоретичне дослідження не передбачає використання додаткових наборів даних.

Використання штучного інтелекту. Інструменти штучного інтелекту не використовувались при написанні цієї роботи.

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ПРОФЕСІЙНО СПРЯМОВАНА НАУКОВО-ДОСЛІДНИЦЬКА ДІЯЛЬНІСТЬ СТУДЕНТІВ ЯК ВАЖЛИВА СКЛАДОВА ПІДГОТОВКИ КОМПЕТЕНТНИХ ФАХІВЦІВ

Анотація. Питання розвитку дослідницьких умінь та організації дослідницької діяльності студентів закладів вищої освіти є багатограним. Нині одним із провідних світових трендів університетської освіти є інтеграція дослідницької складової у процес підготовки майбутніх фахівців. Мета статті: розглянути особливості професійно спрямованої науково-дослідницької діяльності студентів. Методи дослідження: теоретичний аналіз

наукових джерел з проблеми науково-дослідницької діяльності як важливої складової підготовки студентів закладів вищої освіти; критичний та аналітичний аналіз концепцій, теорій і методів. Професійно орієнтована дослідницька діяльність включає: спостереження, вивчення фактів і явищ професійної дійсності; усвідомлення професійних питань, їх аналіз; розробка мети та постановка завдань; висування гіпотез, вибір методів дослідження; теоретичне вирішення задач; оцінка отриманих результатів відповідно до поставлених цілей. Основні функції професійно орієнтованої дослідницької діяльності: соціальна; міжсоціальна; системна; інтегративна; моделювання; інформаційна; комунікативна; технологічна; мотиваційна; розвивальна; рефлексивна. Окреслений зміст функцій дослідницької діяльності дозволяє виокремити та проаналізувати окремі особистісні якості, а також низку дослідницьких і професійних знань, умінь і навичок. Важливою складовою дослідницької діяльності є емоційне ставлення до науково-дослідницької діяльності. Пошук підходів до вирішення завдання додатково регулюється емоційними оцінками, які формуються в результаті виконання завдання і можуть неодноразово змінюватися. Визначальним є усвідомлення майбутньої професійної діяльності: активність студентів у науковому дослідженні залежить від того, як вони уявляють свою професію і чи вважають навички науково-дослідницької діяльності складовою компетентності фахівця. Необхідною якістю дослідників є комунікабельність і незалежність.

Ключові слова: заклад вищої освіти, науково-дослідницька діяльність, наукове дослідження, уміння та навички, студенти.