KAPITEL 4 / *CHAPTER 4* [4]
RESEARCH WORK OF STUDENT YOUTH

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The need to form [8, 10] among student youth the skills for scientific and research activities is declared in a number of legislative acts and regulatory documents. Thus, the Law of Ukraine "On Scientific and Scientific and Technical Activities" states that the development of science is a determining factor in the progress of society, increasing the well-being of its members, and their spiritual and intellectual growth. The same Law stipulates that the state must pursue a targeted policy to ensure the use of the achievements of domestic and world science to meet the social, economic, cultural and other needs of its citizens.

Article 26. of the Law of Ukraine [4] defines the features of involving young students in scientific and scientific-technical activities. In particular, the state creates conditions for involving young students in scientific and scientific-technical activities through a system of specialized general education and extracurricular educational institutions, in particular, scientific lyceums and scientific boarding schools, the Small Academy of Sciences of Ukraine or other similar institutions of extracurricular education. Proposals on the development strategy, implementation procedures and forms of support for activities aimed at involving young students in scientific and scientific-technical activities are developed by the National Council of Ukraine for the Development of Science and Technology.

A scientific lyceum (scientific boarding school) carries out educational activities aimed at attracting and training students for scientific and scientific and technical activities. A scientific lyceum (scientific boarding school), based on a state or municipal form of ownership, has the status of a budgetary institution and is financed from the funds of the relevant local budgets. Financing of scientific lyceums (scientific boarding schools) may be carried out from other sources not prohibited by the legislation of Ukraine [7].

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The Small Academy of Sciences of Ukraine organizes and ensures the participation of students in research and experimental, scientific, design, inventive and search activities, contributes to the formation of the intellectual capital of the nation, the upbringing of future scientific change. The coordination of the activities of the system of specialized extracurricular educational institutions of the Small Academy of Sciences of Ukraine is carried out by the National Center "Small Academy of Sciences of Ukraine", which is a state organization, the funds for ensuring scientific, scientific and technical activities of which are annually determined in the State Budget of Ukraine [2, 4].

Article 65 of the Law of Ukraine “On Higher Education” [8] determines that scientific, scientific-technical and innovative activities in higher educational institutions are an integral part of educational activities and are carried out with the aim of integrating scientific, educational and production activities in the higher education system. The implementation of scientific and scientific-technical activities by universities, academies, institutes is mandatory. The subjects of scientific, scientific-technical and innovative activities are scientists, scientific-pedagogical workers, persons studying in higher educational institutions, other employees of higher educational institutions, as well as employees of enterprises that jointly with higher educational institutions carry out scientific, scientific-technical and innovative activities. The main goal of scientific, scientific-technical and innovative activity is to obtain new scientific knowledge through scientific research and development and to direct it towards the creation and implementation of new competitive technologies, types of equipment, materials, etc. to ensure the innovative development of society and the training of innovative specialists [11].

One of the main tasks of a higher educational institution is to conduct scientific research as the basis for training future specialists and scientific and technological development of the state. Since higher educational institutions that train future teachers are currently important centers of scientific research in the field of higher education pedagogy, it is here that students have the opportunity to master the skills of scientific and research work during their studies. Such skills are necessary both for students who

would like to engage in scientific activities in the future, and for young people who will implement practical pedagogical activities at school, technical school, college or at a higher educational institution of the III-IV level of accreditation, since scientific work skills will help to improve their own pedagogical skills and, accordingly, professionalism [3].

V. Vernadsky, characterizing the work of a higher education teacher in "Letters on Higher Education" (1913), wrote that in a higher educational institution, scientific work is as important as teaching, and is interconnected and intertwined with the latter. Only a gradual awareness of the inseparability of scientific work with correctly delivered teaching in higher education becomes dominant in the academic environment.

Z. Slepkan identifies the following main tasks of students' scientific research activities: the formation of a scientific worldview, students' mastery of the methodology and methods of scientific research; expanding the theoretical horizons and scientific erudition of the future specialist; developing creative thinking and individual abilities of students in solving theoretical and practical problems; instilling in students the skills of independent scientific research, involving them in solving scientific problems; deepening knowledge in a certain scientific direction, forming skills for completing coursework and diploma projects, preparing scientific publications; creating and developing scientific schools, creative teams, training and educating a reserve of scientists, researchers, and teachers in a higher educational institution [5].

Student youth have the opportunity to engage in scientific work by participating in the work of scientific student societies. Thus, in accordance with Article 41 of the Law of Ukraine “On Higher Education”, scientific societies of students (cadets, students), postgraduate students, doctoral students and young scientists operate in higher educational institutions and their structural divisions, which are part of the system of public self-government of the relevant higher educational institutions. The work of the scientific society of students (cadets, students), postgraduate students, doctoral students and young scientists is attended by persons under the age of 35 (for

doctoral students - 40 years), who study or work at a higher educational institution. In their activities, scientific societies of students (cadets, students), postgraduate students, doctoral students and young scientists are guided by the legislation, the charter of the higher educational institution and the regulations on scientific societies of students (cadets, students), postgraduate students, doctoral students and young scientists [1].

Scientific societies of students (cadets, trainees), graduate students, doctoral students and young scientists operate on the principles of: freedom of scientific creativity; voluntariness, collegiality, openness; equality of the right of students to participate in the activities of scientific societies of students (cadets, trainees), graduate students, doctoral students and young scientists [4].

Scientific societies of students (cadets, students), postgraduate students, doctoral students and young scientists: adopt acts regulating their organization and activities; conduct organizational, scientific and educational events; popularize scientific activities among student youth, promote the involvement of students in scientific work and innovative activities; represent the interests of students (cadets, students), postgraduate students, doctoral students and young scientists before the administration of the higher educational institution and other organizations on issues of scientific work and academic career development; contribute to improving the quality of scientific research; promote the exchange of information between young scientists and researchers; contribute to the development of interuniversity and international cooperation; interact with the National Academy of Sciences of Ukraine and national sectoral academies of sciences, scientific and research institutions; perform other functions stipulated by the regulations on scientific societies of students (cadets, trainees), postgraduates, doctoral candidates and young scientists, this and other laws of Ukraine [9].

За погодженням з науковим товариством студентів (курсантів, слухачів), аспірантів, докторантів і молодих вчених керівництво вищого навчального закладу приймає рішення про відрахування осіб, які здобувають ступінь доктора філософії, з вищого навчального закладу та їх поновлення на навчання [8].

The governing bodies of scientific societies of students (cadets, students),

postgraduate students, doctoral students and young scientists are formed on a democratic basis through elections. The structure of the scientific society of students (cadets, students), postgraduate students, doctoral students and young scientists and the organizational mechanism of its activities are determined by the regulation, which is approved by the highest collegiate body of public self-government of the higher educational institution.

The administration of a higher educational institution has no right to interfere in the activities of scientific societies of students (cadets, trainees), postgraduate students, doctoral candidates and young scientists, except in cases where such activities contradict the legislation, statutes or harm the interests of the higher educational institution.

The head of a higher educational institution comprehensively contributes to the creation of appropriate conditions for the activities of the scientific community of students (cadets, trainees), postgraduate students, doctoral candidates and young scientists (provides premises, furniture, office equipment, provides telephone communication, constant access to the Internet, allocates places for installing information stands, etc.).

The financial basis for the activities of the scientific society of students (cadets, trainees), postgraduate students, doctoral candidates and young scientists is the funds determined by the academic council of the higher educational institution [10].

The simplest type of student research work is an abstract. An abstract (Latin referre – to report, to report) is a report on a specific topic, which involves a review of relevant literary and other sources; a presentation of the content of a scientific paper, book, article [6]. From the definition of this concept, we see that an abstract can be performed for different purposes. In the first case, it is an introduction to a specific problem based on the study of the existing source base. Such research work involves the independent work of the researcher to search for various existing information on the problem under study and its subsequent description with the expression of their own opinions and formulation of conclusions. In the second case, the purpose of performing an abstract is to familiarize themselves with a specific scientific work

(monograph, dissertation, article). It is based on the descriptive research method. Writing abstracts is used for students to assimilate available scientific information on a specific topic in seminar classes, when preparing for exams, tests, completing individual tasks, and during independent work. The person who writes an abstract is called a referent, and the process itself is called summarizing.

Scientific article – a type of publication that presents intermediate or final results, highlights specific issues on the topic of the study, and records the author's scientific priority. According to the resolution of the Higher Attestation Commission (HAC) of Ukraine dated January 15, 2003, scientific articles are considered professional if they contain the following necessary elements (examples are given from the article "Youth public organizations as an institution for the formation of students' citizenship [7]

Theses (from Latin tizzies – propositions, statements) are briefly, precisely, consistently formulated ideas, thoughts, and propositions of a scientific report, communication, article, or other scientific work. The length of theses can be within 2–3 pages of printed text.

The sequence of presentation of the content is as follows: outlining the problem and its relevance; logic or methodology of conducting the research; presentation and analysis of the research results; generalization of the results and the possibility of their use.

Master's thesis is one of the types of scientific and research work of students, which certifies the appropriate level of professional education of the student. The initial stage of work in preparing a master's thesis is the selection of a topic. As a rule, students are offered an approximate range of topics for the master's thesis. However, students can propose their own research topic, provided that the relevance and feasibility of such work is properly substantiated. It is important that the topic of the master's thesis is interesting for the student and is close to his interests, hobbies, preferences.

The author [2] suggests the following main stages of work on a master's thesis: choosing a research topic, drawing up work plans, bibliographic search for literary sources, work on the manuscript, and defense of the master's thesis.

Master's thesis topics are assigned to students based on their personal statements.

Having chosen a topic, the master's student must determine the goal, specific tasks and methods for solving them. To do this, he needs to find out what the essence of the proposed idea is, its theoretical novelty and relevance, and the practical value of the topic.

The scientific supervisor of the master's thesis is usually a professor or associate professor of the department in whose field of scientific competence the master's student specializes, and for works carried out on the border of scientific directions - one or two scientific consultants. The scientific supervisor helps the master's student to evaluate possible solutions. However, decision-making is the prerogative of the researcher. Only the author of the work is responsible for the decisions made, for the correctness of the results obtained and their interpretation [1].

Dissertation (Latin: Dissertation – research, reasoning) – a scientific qualification work that has passed preliminary examination and is submitted for defense for the award of a scientific degree in a specialized academic council. According to the "Procedure for Awarding Scientific Degrees", a dissertation is a qualification scientific work performed personally in the form of a specially prepared manuscript or a published scientific monograph. There are two types of dissertation research: 1) a dissertation for the award of the scientific degree of Doctor of Sciences; 2) a dissertation for the award of the scientific degree of Candidate of Sciences. It should be noted that in the field of pedagogical sciences, the scientific degrees of Doctor of Pedagogical Sciences and Candidate of Pedagogical Sciences are currently awarded. We add that according to the Law of Ukraine "On Higher Education" from 2016 The training of doctors of philosophy has begun (A doctor of philosophy is an educational and at the same time the first scientific degree, which is obtained at the third level of higher education on the basis of a master's degree. The doctor of philosophy degree is awarded by a specialized academic council of a higher educational institution or scientific institution as a result of the successful completion by a higher education applicant of the relevant educational and scientific program and the public defense of a dissertation in a specialized academic council) [3].

A doctoral dissertation must contain previously unprotected scientific

propositions and new scientifically substantiated results obtained by the author in a certain field of science, which together solve an important scientific or scientifically applied problem. In turn, a dissertation for the degree of Candidate of Sciences is a qualifying scientific work containing the results of research conducted by the author and new scientifically substantiated results obtained by the author, which together solve a specific scientific problem that is of significant importance for a certain field of science.

A dissertation in the field of pedagogical sciences is a means of developing science along with other types of scientific research, a source of new and appropriate knowledge, which allows solving urgent problems of improving the quality of life by pedagogical means. In addition, it is a measure of the qualifications of the applicant for a scientific degree - its author.

It is known [9] that the spectrum of scientific research is very diverse. Three types of research are regulated: fundamental, applied and development. A dissertation can be attributed to any of these types, since in fact, along with research reports, publications and patents, it is now a form of obtaining scientific results. The specificity of a dissertation is that it is not only scientific research and a way of presenting its results to the scientific community, but also a qualification work, based on the conclusions of the evaluation of which the corresponding scientific degree is awarded.

A dissertation is traditionally considered [6] an extremely valuable work for the author himself, but as a source of new knowledge in modern society it also acquires social significance. This state of affairs leads to the conclusion that a dissertation should be considered first and foremost as a scientific study, and only then as a qualification work.

Thus, the existing and extremely relevant problem is the methodology and techniques for assessing the quality of dissertation research in the field of pedagogical sciences, which should be considered both as a means of developing pedagogical science and as a measure of the qualifications of its author.

The quality of a dissertation research is its integral characteristic, reflecting the conventional and multifaceted nature of the research and which is expressed: a) in the categories of criterion characteristics of scientific rationality - the rules for evaluating knowledge products for their compliance with the standards of science in the information society - truthfulness, significance, falsifiability, effectiveness in solving problems, creativity; b) in the categories of criterion characteristics of scientific research - internal consistency, the obligation to solve the problem, obtaining a significant result, the validity of the scientific information obtained; c) allows assessing the qualifications of the applicant for a scientific degree.

The characteristics of high-quality scientific work listed in the textbook for scientists "Scientist's Workshop" are noteworthy[ ], in particular: solving a topical and unexplored problem; applying modern research methodology and tools; obtaining a fundamentally new scientific result; significant influence on the further development of scientific research; significant practical significance for the development of various spheres of society; textual value.

According to the scientist [10], a qualitative dissertation is characterized by methodological, scientific-theoretical, practical and textual values.

Compliance of the dissertation work with the specified requirements determines the quality of scientific research as a qualification work. Let us present the main requirements for the title of the dissertation, justification of the relevance of the topic, formulation of the goal and objectives of scientific research, and other methodological characteristics of the dissertation research.

It is worth emphasizing: an unsuccessfully formulated topic invariably leads to an arbitrary interpretation of the problem, an incorrect definition of the subject of research, spontaneity in collecting facts, and, in general, to the fact that the hypothesis is formulated as a banal truth. With such a methodological approach, it is difficult to predict the receipt of serious, reliable, practically important scientific results.

An expert, reviewer, future supervisor (consultant) of a dissertation, especially a candidate's, should be convinced of the possibility of the applicant independently carrying out such a research topic. We are talking about the education of the applicant

for a scientific degree, his place of work, experience. It happens that the problem of forming professional competence of future doctors of veterinary medicine is developed by assistants of the English department, and the system of developing the creative potential of future agricultural engineers is substantiated in a pedagogical institution of higher education.

The following provisions can be a guideline for the dissertation expert regarding the correct formulation of contradictions: "The first opposition in a contradiction is most often defined through the concepts: needs, necessity. Requirements, tasks, trends, opportunities, potential. The type of contradiction depends on the content of these concepts. If we are talking about social needs, necessity, requirements, then we have a contradiction between social needs and pedagogical science or practice. If we are talking about the requirements of educational standards, trends in the development of education, potential opportunities of educational technology, then the contradiction is purely pedagogical, in it both oppositions are related to pedagogical phenomena.

The analysis of dissertations convinces that the first contradiction is mainly of a general nature and covers the entire problem under study, while other contradictions are formulated as partial, they relate to methods and means of resolving the general contradiction.

The analysis of the literature on the problem under study shows that the professional-terminological competence (PTC) of an agricultural specialist has not yet received comprehensive scientific coverage, has not been the subject of special research and has been considered fragmentarily in various aspects (psychological, linguistic, communicative). The problems of forming professional-terminological competence were studied by L. Baranovskaya (created a didactic-methodical system of phased training of students in professional communication, investigated the role of knowledge of special terminology in the professional training of future agriculturalists); N. Borodina (proposed a methodology for mastering professional linguodidactic terminology); V. Borshchovetskaya (developed a methodology for teaching foreign language professional vocabulary to students of economic specialties studying at higher agricultural educational institutions); A. Demin (substantiated the

process of mastering new terms at the psychophysiological level, developed ways to optimize the teaching of professional terminology to agricultural students); A. Stebunova (revealed the role of educational terminological dictionaries in studying the basics of medicine). At the same time, further developments are needed to substantiate optimal pedagogical conditions that ensure the effectiveness of the educational process in forming the professional and terminological competence of future specialists in agricultural production."

The results of the analysis of the process [2] of graphic training of engineering students in higher education institutions of Ukraine make it possible to identify a number of contradictions between: requirements for a high level of professional competence of engineering personnel and an insufficient level of their possession of graphic knowledge and skills as a means of cognition and communication; high requirements for graphic training of an engineer and the lack of development of a complex of theoretical and methodological foundations of graphic training of engineering students of higher educational institutions; the need to provide a professional orientation to the graphic activity of a future engineering specialist and the uncertainty of the system of professionally important types of graphic activity of an engineer; the change in the essence of graphic activity in the conditions of a modern information society and the lack of development of information and methodological support based on new information technologies; new knowledge about promising areas of engineering activity, the development of the system of graphic images and the traditional content of graphic training; the specificity of graphic images and graphic activity as sign-symbolic categories and the uncertainty of the features of the forms of educational information of graphic disciplines, the graphic activity of the student as a component of semiotic activity. It is important that after formulating the contradictions, the applicant shows the prospects, ways, methods of their resolution. The indicated contradictions emphasize the relevance of the problem of forming the educational and cognitive activity of students and determine the need to find answers to a number of specific questions.