

## FEATURES OF STUDYING THE COURSE “METHODOLOGY AND LOGIC OF SCIENTIFIC RESEARCH” BY STUDENTS MAJORING IN “SPECIAL EDUCATION”

### ОСОБЛИВОСТІ ВИВЧЕННЯ КУРСУ «МЕТОДОЛОГІЯ І ЛОГІКА НАУКОВОГО ДОСЛІДЖЕННЯ» СТУДЕНТАМИ СПЕЦІАЛЬНОСТІ «СПЕЦІАЛЬНА ОСВІТА»

*The article is devoted to one of the topical problems of improving the methods of teaching and upbringing of children, in particular with special needs, on the basis of the search for modern technologies through students' understanding of the features of scientific knowledge as a relatively independent, purposeful cognitive activity. Emphasis is placed on the acuteness of the modern issue of the development of education. It is proved that the implementation of the strategy of the New Philosophy of Education takes place in the process of development and experimental verification of modern models of quality of education, which directly leads to mastering by students of the course «Methodology and Logic of Scientific Research». Students should be guided by the methods, methodology and logic of conducting their own scientific research.*

*The article highlights various aspects of conducting of research by students, namely: the levels, specifics, features and stages of scientific research are determined; general scientific and specific scientific methods of conducting scientific research, its components and characteristics. Emphasis is placed on the basic requirements for the performance of scientific work, the general provisions of its preparation, structure, essence of structural elements, requirements for design (theoretical part, experimental part, conclusions and applications) are highlighted. Particular attention is paid to the peculiarities of compiling a list of references. The features of the preparation and writing of scientific articles and theses by students as an important, essential and final stage of scientific research are also disclosed. The criteria for evaluating a scientific work, the procedure for its defence are provided.*

*The importance of studying this course by students is proved, which will help them choose the topic of their future scientific research, make a psychological and pedagogical analysis of the selected literature on the basis of generalization and systematization of modern special methods, as well as conduct appropriate observations and experimental work. Particular attention is paid to the disclosure of issues of special and inclusive education.*

**Key words:** *scientific research, methods (general scientific, specific scientific), methodology, logic, scientific work, theoretical part, experimental part.*

*Статтю присвячено одній з актуальних проблем удосконалення методики навчання і виховання дітей, зокрема з особливими потребами, на підставі пошуку сучасних технологій через розуміння студентами особливостей наукового пізнання як відносно самостійної, цілеспрямованої пізнавальної діяльності. Зроблено акцент на гостроті сучасного питання щодо розвитку освіти. Доведено, що втілення стратегії Нової філософії освіти відбувається в процесі розроблення і експериментальної перевірки сучасних моделей якості освіти, що напямую виходить на опанування студентами курсу «Методологія і логіка наукового дослідження». Студенти мають орієнтуватися щодо методів, методології та логіки проведення власного наукового дослідження. У статті висвітлено різні аспекти його проведення студентами, а саме: визначено рівні, специфіка, особливості та етапи наукового дослідження; загальнонаукові та конкретно-наукові методи проведення наукового дослідження, його складові та характеристика. Зроблено акцент на основних вимогах до виконання наукової роботи, висвітлено загальні положення її підготовки, структуру, сутність структурних елементів, вимоги до оформлення (теоретичної частини, експериментальної частини, висновків і додатків). Особливу увагу зосереджено на особливостях складання списку використаних джерел. Розкрито також особливості підготовки і написання студентами наукових статей і тезисів як вагомий, суттєвий і підсумковий етап наукового дослідження. Наведено критерії оцінювання наукової роботи, процедуру її захисту; доведено важливість вивчення студентами зазначеного курсу, який допоможе їм обрати тему свого майбутнього наукового дослідження, зробити психолого-педагогічний аналіз обраної літератури на основі узагальнення і систематизації сучасних спеціальних методик, а також провести відповідні спостереження та експериментальну роботу. Особливу увагу приділено розкриттю питань спеціальної та інклюзивної освіти.*

**Ключові слова:** *наукове дослідження, методи (загальнонаукові, конкретно-наукові), методологія, логіка, наукова робота, теоретична частина, експериментальна частина.*

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**Statement of the problem in general and its connection with important scientific and practical tasks.** The present has raised an acute question regarding the development of education: either it will continue to develop in the direction of traditional concepts, approaches to children with special educational needs as passive objects of influence, underestimating their spiritual formation and development, or it will fill education and upbringing

with a new spiritual, life-creating content, declaring that the main thing for special, including inclusive, education is the child, with his/her joys and pains, different problems, needs, interests, with his/her personal inner world.

At the present stage of the development of society, in the conditions of hostilities, the task of rethinking and cognition of existence, creating a new philosophy of education aimed at revealing the life potential of the

child, depriving him of certain psychological problems, has become more acute than ever. This encourages the search for new ideas, modern methods and techniques of work, initiated on an innovative basis.

Special education is in dire need of revision and rethinking of the paradigm of the educational, rehabilitation and correctional process, updating its content and introducing modern technologies. That is why an important task of special education is to form modern life strategies that are as adequate as possible to the new situation that has developed in Ukrainian society. The educational and rehabilitation process should be aimed at establishing a strategy for building a developmental lifestyle, educating a free and responsible personality. Of particular importance is the consideration of these issues in the context of psychological and pedagogical science and practice.

That is why it is so important for students of both bachelor's and master's levels of higher education to study the course "Methodology and Logic of Scientific Research". This course contributes to their mastery of the methodology of scientific research, the construction of scientific theories, scientific projects, methodological tools for solving problems of professional activity, in particular in the search for effective updated methods, methods and techniques of teaching and educating children with special needs on the basis of generalization and systematization of knowledge of special pedagogy and psychology, special methods, experimental work carried out by them and observations of children during the passage of pedagogical practice, studying the pedagogical experience of the best teachers of basic schools. Therefore, this course occupies an important place in the training of master students in "Special Education".

Familiarization of students with the content of the methodology of scientific research is carried out in the context of modern achievements of world and Ukrainian science, gives them the opportunity to master theoretical knowledge and practical skills in implementing the requirements of logic and methodology.

That is why the search for new models of teaching and didactic approaches, modern ideas about the organization of the educational process in a special school, as well as improving the teaching of academic subjects becomes relevant. Mastering this course by students determines the level of their methodological skills, and also provides an opportunity to implement the latest technologies on topical problems of special pedagogy and psychology. At the same time, they should be guided by the latest modern psychological and pedagogical research and introduce advanced technologies that will increase the efficiency of the educational process in the conditions of special educational institutions, and also have to get acquainted with the range of scientific tools, master

the skills of analytical and practical work in the form of their own (bachelor's, master's) research.

**Analysis of the latest research and publications.**

The scientific literature discusses various aspects of research methodology:

- scientific cognition as an independent, purposeful cognitive activity, its levels, specifics, features (O. Kolesnikov, E. Podolska);
- general aspects and fundamentals of the organization of scientific research (I. Amosov, M. Golovkova, N. Krauz, V. Sayuk, E. Chernyshova, F. Chmylenko);
- questions about the methodology and logic of scientific knowledge, the organization of scientific research (O. Danylyan, O. Dzioban, S. Farenik, G. Tsekhmistrova);
- modern methodologies of personality education (I. Bekh, S. Maksymenko);
- fundamentals of pedagogical research (A. Korobchenko, V. Lappo, S. Mironova);
- methodology and search for conceptual approaches to the socialization of young people with special needs (M. Gladysh, T. Solovyova, M. Lukashevich, I. Tatyanchykova, O. Khokhlina).

The presented studies prove the importance of mastering methodological tools in explaining the content, trends and current problems in society, as well as for solving the problems of professional activity. The authors reveal the concept and content of scientific research, define its principles, functions and interconnection of methods. Particular attention is paid to the state of scientific research in modern Ukraine, in particular in the field of special education, the change in the paradigm of viewing a child with special needs. Modernization and implementation of a number of acute problems in science, including educational, leads to the solution of issues of its methodology and logic of scientific research.

Therefore, this indicates the significance of students' mastery of this course in the process of their mastery of the relevant educational program.

**Highlighting previously unresolved parts of the general problem.** It should be noted that mastering the course "Methodology and Logic of Scientific Research" by students in the conditions of mastering the bachelor's and master's programs – Special Education, requires some clarifications in view of the hostilities in Ukraine: the problem of the ability of a child with special needs to survive in the environment has become very acute. The current situation requires their adequate adaptation to the conditions of education, special psychological and pedagogical work aimed at weakening the relevant psychological problems, which is carried out sporadically, which, of course, affects the further socialization of schoolchildren. That is why there is a significant need to use new approaches to solving the outlined problem, initiating and implementing

methodological problems in the process of preparing students' qualification works.

**Formulation of the goals of the article (statement of the task).** The aim of the article is to reveal the importance of mastering this course, methodological tools for solving problems of future professional activity, mastering theoretical and practical skills in the process of preparing qualification and other scientific works.

**Presentation of the main material of the study.** In the process of mastering the course of lectures, students get acquainted with the issues of scientific knowledge as an independent purposeful cognitive activity, which includes not only methods and means of cognition, but also already formed logical forms of cognition and language means. Therefore, concepts, theories, scientific hypotheses, etc., are not only results, but also forms of scientific knowledge, goals aimed at achieving reliable systematized knowledge capable of explaining phenomena, predicting their possible changes and being applied in practice. That is why scientific knowledge solves clearly defined problems that are determined by its goals and, in turn, are determined by the practical needs of society and the modern development of science itself [1, p. 23].

At the same time, scientific knowledge is based on the theoretical and empirical levels. At the theoretical level, systems of knowledge and theories are formed, in which general and necessary connections are revealed, laws are formulated in their systemic unity and integrity. At the empirical level, there is the observation of objects; fixation of facts, results of experiments; correlations and connections between individual phenomena are established [2, p. 14–16].

Students should understand the features of scientific facts that are studied by posing and solving a certain problem. The condition for the formulation of the problem is the problem situation – the objective contradiction between the goal of cognition and the means of its realization. Statement of the problem is the beginning of its solution through a hypothesis. Proof (confirmation) of a hypothesis leads to the emergence of a concept, and in its developed form, a theory. In practical classes, students learn to pose certain problems of hypothetical scientific research, discuss various problem situations, formulate an appropriate hypothesis and concept of a research [4, p. 22].

The lecture material provides for the disclosure of the main stages and methods of scientific research. Students get acquainted with general scientific (empirical-theoretical, theoretical and empirical) and specific scientific methods of scientific research, which are mostly characteristic of pedagogical research. In this context, characteristics are given and the following concepts are formulated: analysis and synthesis, induction and deduction, modelling, generalization, abstraction, specification, observation,

comparison, experiment (ascertaining and formative), method of studying documentary sources, survey, expert method. All of these methods are carefully analyzed in practical classes with examples, based on a hypothetical study or on the example of their use in the process of students' qualification work (by the way, there is an opportunity for correction and clarification).

The following lectures are devoted to the basic requirements for the preparation and implementation of scientific (coursework, qualification, master's) work, its structure, the essence of structural elements, and design features. Students' attention is drawn to the fact that the relevant scientific work is a mandatory component of the scientific, methodological and professional training of specialists in pedagogical specialties (including Special Education). This is a form of independent creative scientific work of the student. The qualification work is carried out to check the theoretical and especially practical training of the student as a future specialist, that is, his ability to work with literature, analyze and systematize it, summarize pedagogical and scientific experience, conduct scientific research (ascertaining and formative experiment) under the guidance of a teacher (supervisor), and draw comprehensive conclusions are tested. The preparation of a scientific work enables the student to systematize the acquired theoretical knowledge, check its quality, think scientifically and creatively, develop cognitive activity, conduct a comparative analysis of different approaches to solving a certain (chosen) pedagogical problem [8, p. 271–272]. In addition, in the process of performing scientific work, the student's ability to independently comprehend the problem is revealed, the ability to conduct a scientific experiment, formalize its results, offer methodological recommendations to practical specialists to improve the efficiency of the implementation of this issue.

Mastering the lecture material will help the student to understand the requirements for the preparation and implementation of scientific work: its structure, the essence of structural elements, the design of the introduction, the theoretical part (analysis of literary sources), the experimental part, conclusions and applications). Students get acquainted with the main stages of the qualification work, the evaluation criteria, as well as the procedure for its defence [3, p. 34–36].

The work program of the course "Methodology and Logic of Scientific Research" provides for the disclosure of issues of preparation of scientific developments (articles, theses, manuals) based on the results of scientific research as a significant, essential and final stage of students' scientific research.

During the study of this course, students receive tasks for independent work, the implementation of which involves a practical orientation, that is, they

have an approximate form: to show the application of certain methods of scientific research on a specific example; determine the purpose, objectives, object, subject; to propose the methodology of the ascertaining experiment (purpose, objectives, content); draw conclusions; prepare a scientific article on your (hypothetical) problem.

Particular attention is paid in the process of studying the course to the study of special and inclusive education. Students are convinced that the emphasis of modern scientific research is transferred to the consideration of optimization and rethinking of the paradigm of the educational-rehabilitation and correctional process, updating its content, applying the latest technologies and scientific research, taking into account the conceptual provisions of the modern reform of the Ukrainian school, the main components of the new Concept of Special Pedagogy.

**Conclusions and prospects for further research.** In the process of mastering this course, students:

- understand the disclosure of the content of methodological approaches and the logic of scientific research, the construction of scientific theories, scientific projects;

- get acquainted with methodological tools for solving problems of future professional activity, conducting scientific research in the context of modern achievements of world and domestic science;

- learn the skills of analytical work in the process of preparing various scientific materials;

- receive knowledge on the preparation and implementation of qualification works, and appropriate specific practical assistance from the teacher;

- are able to solve complex tasks and problems of research and innovation nature in relation to special and inclusive education.

Prospects for further research are to study the development of new conceptual provisions

for the education and upbringing of children with special needs, optimization of their preparation for independent life on the basis of an in-depth consideration of modern methodological approaches.

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