



METHODS OF TEACHING SPECIAL DISCIPLINES AS A PEDAGOGICAL SUBJECT

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Abstract

This article analyzes the role of special disciplines teaching methodology in the system of pedagogical disciplines, its theoretical and practical foundations, methodological approaches in the teaching process and the significance of modern educational technologies. It also highlights the role of pedagogical methods, innovative technologies and interactive methods in the effective teaching of special subjects. According to the results of the research, teaching special disciplines as a pedagogical discipline serves to organize the educational process, select teaching materials, manage and evaluate the educational process on a scientific basis.

Keywords: Special disciplines, teaching methods, pedagogy, educational technology, didactics, educational process, innovative methods, pedagogical approach, competence, effectiveness of teaching.

Introduction

The development of the education system is closely linked with the development of society, and new methodological approaches to the educational process are introduced in each period. One of the important issues in the modern education system, especially improving the effectiveness of the teaching process in professional and special disciplines, is one of the most important issues. Special disciplines are directly related to manufacturing, technology, economics, natural sciences and other areas, and science-based teaching methods are necessary for deep knowledge.



Special discipline teaching methodology as a pedagogical discipline examines the organization of the educational process, the selection of teaching materials, the development of teaching forms and methods, and the assessment of pupils or students' knowledge. This discipline develops in close relationship with pedagogy, psychology, didactics and other disciplines.

Today, innovative technologies, information and communication tools, interactive methods and competency-based approaches are widely used in the education system. In this regard, the methodology of teaching special disciplines on the basis of modern pedagogical approaches is also developing. This plays an important role in improving the effectiveness of the educational process, developing students' independent thinking and preparing them for professional activities.

In the system of higher education of Uzbekistan "methodology of teaching special disciplines" (mainly taught at the magistracy level) is formed as an independent pedagogical discipline and is a special (subjective, professionally oriented) department of didactics.

The main signs and their place in the quality of pedagogical science

No	Character/Attribute	Explanation and examples
1	Independent pedagogy	Relies on the laws of general pedagogy and didactic, but conducts in-depth research, adapting them to the content of special disciplines.
2	Scientific Basis	General pedagogy, didactics, professional pedagogy, educational psychology, pedagogical innovation, educational technology, information technology.
3	Predmetti (Organis Obi'a)	The process of teaching special (specialty, professional) subjects in higher education institutions, its legislation, principles, methods, forms and technologies.
4	Purpose	Preparation of masters (future teachers) for effective teaching of their specialty subjects, innovative and competency oriented.
5	Main Functions (Most Important)	<ul style="list-style-type: none">• study of specific laws and features of teaching special disciplines• Master of modern interactive, digital, projective, problem and other methods• Design of the educational process (lesson plans, syllabuses, teaching methodological complexes)• Teaching students methods of formation and assessment of professional competencies• Development of pedagogical skills and innovative approaches

Why exactly pedagogical science?

It is not enough just to have in-depth knowledge of the subject. A teacher must be able to combine the following two aspects perfectly:



- Correct understanding and interpretation of the content of science → scientific (specialty) competence
- Effective delivery of content → pedagogical competence to the student's mind, motivation, development of independent thinking

It is with this second component that the teaching methodology of special disciplines forms it. He adapts the general didactic rules to the specific features of special disciplines (laboratory work, modeling, practical skills, analysis of problem situations, etc.).

Differences in terms of examples:

Direction	Methodological attention specific to special disciplines
Engineering/Engineering	Methods of laboratory and experimental work, simulators, virtual laboratories, safety rules
Economy/Finance	Case study, modeling, business games, financial statements analysis
Medicine/Biology	Clinical skills, simulation, patient communication, ethics
Agriculture	Field Experiments, Agrotechnology, Monitoring and Evaluation Methods

Major Sections of Subject Content: Topics that are not uncommon in graduate programs. In master's programs, in particular in the areas of pedagogy, teaching methodology, or pedagogy of higher education, the content of science is usually divided into the following main sections. The departments cover the educational process theoretically and practically, forming the necessary knowledge and skills for students (future teachers or education professionals). Below, I will explain the sections you pointed out in detail, providing a brief explanation of each, and examples of how it applies at the graduate level. These topics are often studied in the higher education system of Uzbekistan as well as in accordance with international standards (for example, the Bologna process).

Subject, purpose, tasks and scientific foundations of science

This section defines the main object of science (for example, "Pedagogy of higher education") - the educational process, its goals and objectives (motivation of students, introduction of innovation). Its scientific basis is based on the theories of psychology, pedagogy and philosophy (for example, the ideas of J. Dewey or L. Vigotsky). At the master's level, through this department, students learn to theoretically analyze



education in their area of reference (e.g. engineering or humanities). Example: Exploring "student-teacher interaction" as a subject of science.

Normative-legal framework of higher education (Law on Education, National Training Program, state educational standards)

This section analyzes documents such as the Law of the Republic of Uzbekistan "On Education" (2020 edition), the National Training Program (1997) and the State Education Standards (DTS). In master's programs, students will learn the practical application of these documents, e.g. designing curricula in accordance with DTS. Internationally, it is comparable with UNESCO and European Union standards. This section is important for understanding education policy as it defines the rights and responsibilities of teachers.

Principles of education and their application in special subjects

The theory and practice of educational principles (democratic, scientific, continuity, individual approach, etc.) will be studied. At the master's level, emphasis is placed on the application of these principles in special disciplines (e.g. in mathematics or medicine). Example: Segregation of groups of students according to ability through the principle of the "individual approach". This unit teaches students to integrate principles in their disciplines as teachers, thereby increasing the effectiveness of teaching.

Organizational forms of the educational process (lecture, practical, laboratory, seminar, independent work)

The chapter describes the main forms of the learning process: lectures (theoretical), practice (skills formation), laboratory (conducting experiments), seminar (discussion) and independent work (research). In graduate programs, students will learn to design these forms, for example, organizing freelance work on online platforms. In the modern approach, these forms are integrated with each other, for example, group projects in workshops.

Modern teaching methods and technologies

This is the most dynamic section and covers the following sub-topics:

- Interactive Techniques (Brainstorming, Group Work, Debate-Based Discussion): Used to increase student engagement. Example: Generating new ideas generated through brainstorming.

- Project-Based Education (PBL): Based on real-world problem-solving, for example, groups of students produce a project.



- Digital tools (LMS, virtual labs, AI assistants): LMSs such as Moodle or Google Classroom are used in virtual labs (PhET simulations) and AI (such as ChatGPT) in teaching.

- Blended learning and flipped classroom: Blended learning (online and offline) and reverse classroom (video viewing at home, discussion in class). At graduate level, students are testing these techniques in their disciplines, e.g. personalized learning with the help of AI.

preparation of educational and methodical complexes (course development, tests, silabus, curriculum)

This unit teaches the skills of creating teaching materials: sylabus (course plan), curriculum (subject content), course developments (lesson plan) and tests (multiple choice or open). In master's programs, students learn how to design sets in accordance with DTS, such as creating tests based on the Bloom taxonomy. This section has practical projects as students develop their own learning frameworks.

Assessment of knowledge, skills and competencies of students (rubrics, portfolio, test types)

Evaluation systems are studied: formative (during the process) and summative (final). Tools: rubrics (assessment by criteria), portfolio (student work set), and test types (MCQ, essay). At the master's level, students learn how to make assessments fair, such as automated grading through AI or showing competency through portfolios. The department aims to improve the quality of education.

Pedagogical research methods (study of one's activities as teachers)

This unit teaches action research techniques: the teacher analyzes his or her lessons, identifies problems, and suggests solutions. In master's programs, students will learn to conduct empirical research (surveys, interviews). Example: Evaluation of outcomes by using interactive methods in their lessons. This department forms the basis for the students' dissertation.

These departments in master's programs usually are taught for 2-4 semesters, enriched by practical exercises and projects. If you want to explore any of these topics in detail or need examples (such as curriculum template), ask for more information!

Current Development Trends (Forecast 2025–2026)

- The competency approach prioritizes skills and competence over → knowledge

- Digitization → Moodle, Google Classroom, Kahoot, Mentimeter, virtual simulators are common



- Student-centered learning instead of passive lectures → interactive and active methods
- Adaptation to different needs → inclusive education
- Integration of elements of sustainable development and environmental education into special disciplines

Conclusion

The methodology of teaching special disciplines is not only technical, but also deep pedagogical. It is an important link in the training of personnel who can be a highly qualified specialist in higher education and an effective teacher at the same time. If the teacher knows only the content of the subject, but cannot convey it to the student, the result will be low. On the contrary, if the pedagogical skills are high, but the content of the subject is shallow, the professional level decreases. The science that teaches the perfect combination of these two is precisely the methodology of teaching Special Disciplines.

According to the results of the study, the following conclusions were made:

The methodology of teaching special disciplines occupies an important place in the system of pedagogical disciplines.

This discipline serves to effectively organize the educational process and develop the professional competence of students.

The use of modern educational technologies and interactive methods improves the effectiveness of teaching.

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