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METHODOLOGY FOR ORGANIZING THEORETICAL PHYSICS LESSONS BASED ON AN INNOVATIVE APPROACH

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Abstract: This article scientifically and methodologically analyzes the issue of developing the competence of future physics teachers during theoretical lessons. The study explains the essence and types of competence, as well as the theoretical foundations for developing competencies in physics education. In addition, innovative approaches aimed at developing the methodological, scientific, information-communication, and reflective competencies of future teachers during theoretical lessons are proposed.

The article scientifically substantiates the stages of competence development based on active teaching technologies, interactive methods, problem-based learning, and integrated approaches. Furthermore, special attention is paid to assessment systems and self-development mechanisms in order to improve the effectiveness of organizing theoretical lessons.

The research results make it possible to adapt the professional preparation of future physics teachers to the requirements of modern education, enhance their creative and analytical potential, and prepare them thoroughly for practical activities.

Keywords: competence, theoretical lesson, physics teacher, methodology, innovative educational technologies, reflection, active learning, pedagogical approach, mentoring, assessment system.

Introduction. In the current era of globalization, the education system is recognized as the main factor in the development of society. Digital technologies, scientific achievements, and new pedagogical concepts are fundamentally transforming the essence of the teaching profession. In particular, the issue of developing the professional competence of future teachers in fundamental disciplines such as physics is considered one of the most important tasks of modern education. This is because physics is one of the key disciplines that develops thinking through understanding the laws of nature, modeling them, and applying them in practice.

In the Republic of Uzbekistan, the Law “On Education,” the “Development Strategy of New Uzbekistan for 2022–2026,” and the concept for modernization of the higher education system identify improving teachers’ qualifications and competencies as priority directions. From this perspective, equipping future physics teachers with modern pedagogical thinking, innovative technologies, and methodological approaches already during the process of theoretical lessons has become an urgent task.

Theoretical lessons serve as a foundational stage in the professional formation of future teachers. These lessons are aimed not only at acquiring theoretical knowledge, but also at developing students’ abilities for independent analysis, logical reasoning, scientific problem-solving, and methodological

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thinking. Therefore, the development of methodological approaches aimed at forming teaching competencies at this stage, their scientific and theoretical justification, and their enrichment with practical recommendations are considered among the urgent tasks of modern pedagogy. Such a methodological system strengthens teachers' ability to apply theoretical knowledge in real pedagogical situations and develops innovative thinking and reflective approaches in them. As a result, theoretical lessons become not only a source of knowledge, but also a practical training environment that shapes the professional competence of future teachers.

This article analyzes the methodological foundations for effectively organizing the process of developing future physics teachers' competencies, innovative approaches that can be applied during theoretical lessons, active teaching methods, integrated forms of instruction, and assessment systems. The purpose of the article is to develop scientific and methodological recommendations aimed at improving the competence of physics teachers during theoretical lessons and to reveal possibilities for their implementation in practice.

Analysis.

An analysis of a number of scientific research materials [3,5,6,7,8,9,12] shows that the main types of approaches contributing to the development of methodological competence during theoretical lessons in the educational process are as follows:

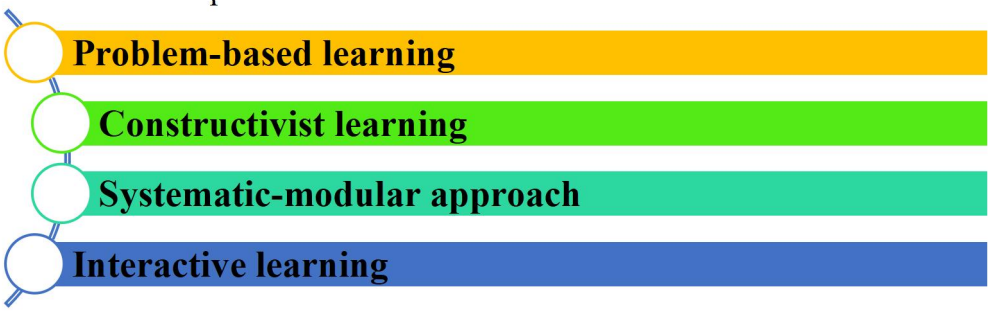


Figure 1. Types of Important Approaches that Contribute to the Development of Methodological Competence in Theoretical Lessons

The first important approach that contributes to the development of methodological competence during theoretical lessons is problem-based learning. In this method, the teacher does not provide ready-made knowledge; instead, students are presented with a problematic situation. For example, through questions such as "If the rotational speed of the Earth doubled, how would gravity change?", students express their ideas, provide arguments, and engage in discussions. As a result, skills such as analytical thinking, identifying cause-and-effect relationships, and drawing conclusions based on scientific logic are developed.

The next approach is constructivist learning. In this approach, students do not receive knowledge in a ready-made form; rather, they construct knowledge based on their own experiences and observations. For example, Newton's second law is studied not as a ready-made formula, but as something "discovered" through experimental results. This process stimulates students' independent inquiry, scientific thinking, and internal motivation for understanding scientific laws and principles.

Organizing theoretical lessons into modules is a practical expression of the systematic-modular approach, which enables the step-by-step development of methodological competence in teacher preparation. Each module is logically interconnected and includes theoretical knowledge, discussions, mini-projects, and reflection elements in an integrated form. Such an approach allows students to systematically expand their knowledge, analyze the information mastered at each stage, and apply it in practice. In theoretical lessons organized on a modular basis, students are not passive listeners, but active participants in the educational process. During the study of a topic, they not only acquire new

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knowledge, but also analyze teaching methods, forms of organizing educational activities, and lesson structures. In addition, through reflection, students become able to identify their own mistakes and begin to draw independent conclusions related to teaching practice. In this way, the systematic-modular approach organizes the educational process consistently, meaningfully, and purposefully while developing students' methodological thinking, creativity, and self-improvement skills.

Interactive teaching methods in theoretical lessons play an important role in activating students' thinking processes, developing communication culture, and improving their ability to justify and defend their opinions. Methods such as "Brainstorming," "Cluster," "Fishbone" (cause-and-effect analysis), and "Debate" engage students as active participants in the lesson process and help transform learning from passive absorption of knowledge into active thinking [19].

For example, when the "Brainstorming" method is applied to topics such as "Mechanical Oscillations" or "Thermal Conductivity," students generate numerous ideas within a short time and evaluate them scientifically. This method strengthens creative thinking and logical analysis.

The "Cluster" method is useful for visually demonstrating the relationships between key concepts in the topic "Kinetic Theory of Gases."

The "Fishbone" technique makes it possible to identify cause-and-effect chains when analyzing questions such as "Why do real gases differ from ideal gases?"

The "Debate" method, for instance, develops students' culture of defending scientific opinions by dividing them into groups to discuss topics such as "The Effectiveness of Energy-Saving Technologies."

In addition, the application of innovative technologies in theoretical lessons can also lead to the following effective achievements:

№	Physics Lesson Topic	Applied Innovative Technology	Expected Outcome
1	Kinetic Theory of Gases	PhET simulation, GeoGebra	Visual observation of molecular motion and connecting theoretical concepts with experimental imagination.
2	Types of Heat Transfer	Canva infographics, Microsoft PowerPoint animations	Visual analysis of heat transfer processes and comparative understanding of phenomena.
3	Ohm's Law and Electric Circuits	Virtual laboratory (PhET Circuit Construction Kit)	Developing practical experimental skills by virtually assembling electric circuits and observing changes in voltage and current.
4	Magnetic Field Lines	PhET, Algodoo, AR (Augmented Reality) visualization	Visualizing magnetic phenomena spatially and simplifying the analysis of complex concepts.
5	Mechanical Oscillations	Mentimeter, Quizizz interactive tests	Increasing students' thinking speed and developing reflection skills through test results.

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6	Law of Conservation of Energy	ChatGPT assisted analytical tasks	Developing analytical and logical thinking skills in explaining the concept of energy.
7	Solar System and Planetary Motion	Virtual 3D modeling (Solar System Scope)	Developing spatial thinking and visually analyzing astronomical phenomena.
8	First Law of Thermodynamics	Padlet, Jamboard group discussion platforms	Developing scientific collaboration and culture of idea exchange among students.
9	Interference and Diffraction of Light	Adobe Animate, VideoLab, or Canva animations	Explaining complex optical phenomena dynamically and strengthening visual perception.
10	Viscosity and Fluid Motion	Virtual simulation, interactive video analysis (YouTube Edu Physics)	Observing fluid properties and understanding the relationship between theory and practice.

The role of innovative technologies in theoretical lessons is invaluable. One of the most effective approaches is the use of simulations and virtual laboratories, which allow students to connect theoretical knowledge with real phenomena. For example, studying processes such as diffusion in gases or electromagnetic induction through virtual models strengthens students' theoretical understanding. This approach also provides significant opportunities for teachers, enabling them to simplify and explain complex processes through visual and interactive elements in their lessons.

Another effective way of developing methodological competence is the reflective approach. In this approach, students analyze their own learning activities during the lesson process by asking questions such as: "What did I learn today?", "Which method was most useful?", and "What would I change next time?" Through such reflective journals, students develop their own teaching style, identify their strengths and weaknesses, and learn self-improvement strategies.

In recent years, the STEAM-integrative approach has become widely used in education. In this method, physics is taught in connection with other disciplines such as mathematics, technology, engineering, and art. For example, when studying the topic "Heat Transfer," students may design an environmentally friendly heating system project, through which they not only learn the physical process itself, but also its real-life applications. This contributes to the highest level of methodological competence – the development of creative and interdisciplinary thinking.

In addition, through mentoring and peer learning approaches, more experienced students participate in teaching others. Each student acts as a "mini-teacher" by mastering a small topic and explaining it to classmates. This process helps students learn how to communicate their knowledge to others, develop pedagogical speech, and perceive themselves as real teachers.

Assessment systems in theoretical lessons should also be organized in innovative ways. Through portfolio- and project-based assessment, students collect lesson plans, analyses, experiment schemes, and reflections. This makes it possible to evaluate not only final results, but also the dynamics of students' growth and development.

Finally, the integration of digital technologies is an inseparable component of developing methodological competence. Platforms such as Canva, PhET, GeoGebra, Quizizz, ChatGPT, and

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Mentimeter increase interactivity in theoretical lessons and make the educational process more engaging and modern. Digital literacy is one of the fundamental skills of a modern teacher.

In conclusion, the process of developing methodological competence directly depends on the scientific and systematic organization of theoretical lessons, the purposeful selection of active teaching methods, and the effective implementation of reflection, interdisciplinary integration, and digital technologies. Such an approach transforms the educational process into an active environment that not only provides knowledge, but also promotes students' independent thinking, analytical approaches, and creative potential. Through the комплекс use of interactive, problem-based, modular, and innovative methods in theoretical lessons, future physics teachers gain opportunities to strengthen their knowledge through practical experience. As a result, they become specialists capable of applying modern approaches in organizing the educational process, managing students' cognitive activities, and continuously working on self-improvement. Consequently, theoretical lessons become an effective educational platform that develops teachers' methodological thinking, encourages the implementation of innovations in the educational process, and strengthens creative thinking. In this way, methodological competence manifests itself not only as a set of knowledge, but also as an important factor of professional growth and pedagogical innovation.

The scientific competence of a future physics teacher is the ability to understand scientific problems, analyze them, find solutions using scientific methods, interpret experimental results, and express conclusions on a scientific basis. The use of innovative approaches in developing this competence during theoretical lessons is one of the key factors that increase the effectiveness of the educational process.

№	Physics Topic	Applied Scientific Approach	Developed Scientific Activity
1	Kinetic Theory of Gases	Research-based approach	Modeling molecular motion and energy
2	Van der Waals Equation	Problem-analytical approach	Analyzing the state of real gases
3	First Law of Thermodynamics	Experimental-research approach	Determining energy conservation through experiments
4	Types of Heat Transfer	Integrative approach (physics + biology + environmental protection)	Interdisciplinary analysis of phenomena
5	Electric Current and Resistance	Constructivist-practical approach	Analyzing electric circuits and representing them graphically
6	Magnetic Field	Modeling approach	Representing magnetic field lines in 3D models
7	Mechanical Oscillations	Project-based research approach	Designing and analyzing experimental projects
8	Interference and Diffraction of Light	Experimental-visual approach	Measuring experimental data and graphical analysis
9	Structure of the	Theoretical-modeling	Analyzing atomic

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	Atom	approach	models and electron shells
10	Solar System and Law of Gravitation	Simulation and virtual experiment approach	Studying planetary motion and gravitational interactions

The first innovative approach that contributes to the development of scientific competence is research-based learning. In this approach, students are not limited to acquiring ready-made knowledge; instead, they independently conduct research on scientific problems. For example, a small research project may be organized around the question: "What factors influence the thermal expansion of solids?" Students analyze theoretical concepts, formulate hypotheses, interpret experimental results, and draw conclusions. Through this process, their scientific thinking, observation skills, and analytical reasoning are developed.

The second effective method is problem-based learning. Scientific competence is not only about possessing information, but also about asking questions and solving them using scientific methods. Therefore, teachers should not provide "ready-made answers" during theoretical lessons. For example: "If atmospheric pressure were reduced by half, how would the boiling temperature of water change?" Students express their hypotheses and explain them based on theoretical principles and formulas. Through this process, they learn to analyze cause-and-effect relationships and justify hypotheses and conclusions with scientific evidence.

The third approach is project-based learning. Students develop small projects related to a particular physical problem or phenomenon. For example, projects such as "Selecting the Optimal Material for Thermal Insulation," "A Model for Efficient Use of Solar Energy," or "Modern Methods of Measuring Magnetic Fields" provide opportunities to test theoretical knowledge in practical contexts. As a result, students master the stages of scientific methodology in practice, including problem identification, goal setting, and result analysis.

The fourth important approach is experiment-oriented learning. In theoretical lessons, teachers do not leave experiments solely for practical classes, but connect them directly with theoretical analysis. For example, on the topic "The Relationship Between Gas Pressure and Volume," experiments may be conducted through virtual laboratories or simulations. By observing theoretical laws, drawing graphs, and analyzing data, students acquire scientific approaches to investigation and reasoning.

Another important approach is education based on modeling and simulation. Through modeling physical phenomena, students learn to theoretically analyze complex processes. For example, modeling processes such as "Molecular Kinetic Energy" or "Electromagnetic Induction" through computer programs expands students' scientific imagination. Through this method, they become capable of proving cause-and-effect relationships using digital results and simulations.

In addition, integrative and interdisciplinary approaches also strengthen scientific competence. Teaching physics in connection with mathematics, computer science, chemistry, or technology helps students develop comprehensive scientific thinking. For example, activities such as "The Mathematical Model of Heat Transfer Processes" or "Analyzing Mechanical Oscillations Using Computer Programs" enable students to recognize interdisciplinary relationships among different fields of science.

Critical thinking and analytical reasoning methods also play an important role in developing scientific competence. During lessons, students are encouraged to deeply analyze causes through questions such as "Why?", "How?", and "What would happen if this were not the case?" This method

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develops their ability to think independently, provide arguments, and critically analyze theoretical foundations.

Furthermore, developing scientific writing and presentation culture is also essential. Students express the results of their scientific observations in written form and learn to present information through graphs, tables, and diagrams. These skills later become the foundation for preparing scientific articles, theses, or conference papers.

In addition, through reflective and metacognitive approaches, students analyze their own learning activities, identify what they know, what they have not fully understood, and what they need to learn in the next stage. Such an approach develops skills of self-improvement, inquiry, and critical self-assessment.

In general, developing scientific competence during theoretical lessons is not about memorizing knowledge, but about cultivating the culture of analyzing, experimentally verifying, and scientifically justifying it. Through the integrated use of innovative methods such as problem-based learning, research-oriented education, project-based work, modeling, digital technologies, interdisciplinary integration, and reflective analysis, future physics teachers develop into specialists with modern scientific thinking, analytical reasoning abilities, and the capacity to make decisions based on scientific evidence.

For future physics teachers, information and communication competence (ICC) is one of the fundamental professional capacities required for functioning effectively in the modern educational environment. It refers to a teacher's ability to integrate digital technologies into the educational process, effectively use information resources, possess online communication culture, and apply digital innovations in education [18].

In order to develop the ICC competence of future teachers during theoretical lessons, it is necessary to use various innovative approaches. Such approaches not only make lessons more engaging, but also develop students' independent thinking, critical analysis, and skills in the rational use of modern educational tools.

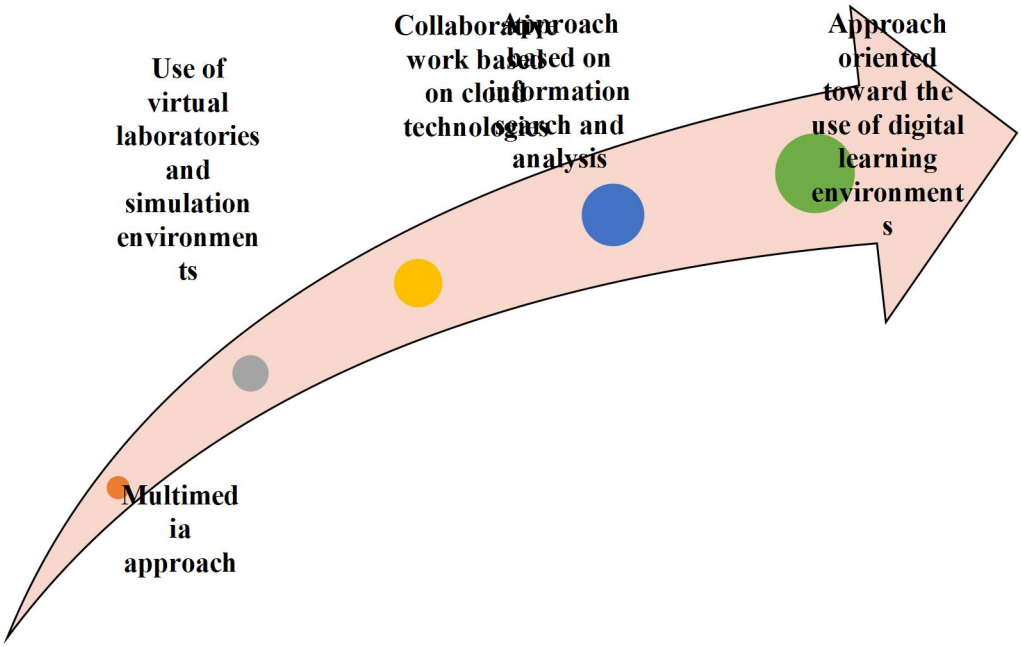


Figure 2. Stages of Developing Information and Communication Competence (ICC) of Future Teachers in Theoretical Lessons

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First, the approach oriented toward the use of digital learning environments is of great importance. In this approach, students use electronic resources, educational platforms, and simulation programs instead of traditional textbooks. For example, while studying the topic "Kinetic Theory of Gases," visual observation of molecular motion through PhET simulations provides students with a deeper understanding. In the topic "Heat Transfer," scientific YouTube channels and interactive videos help demonstrate phenomena and contribute to the development of information and communication competence (ICC).

Second, the approach based on information search and analysis strengthens students' independent research activities during theoretical lessons. Students search for scientific information on platforms such as Google Scholar and ResearchGate, analyze the obtained materials, and compare sources according to their reliability. For example, by studying various scientific articles on topics such as "Van der Waals Equation" or "Real Gases," students can connect theoretical concepts with real scientific research.

The third approach is collaborative work based on cloud technologies. In this method, students collaboratively complete theoretical assignments using digital tools such as Google Docs, Canva, Padlet, or Jamboard. For example, students may collaboratively create an infographic on the topic "Electrostatic Laws" using Canva or prepare a presentation on "Fundamental Laws of Mechanics" using Google Slides. Through this process, they acquire skills in teamwork, online communication, and the culture of exchanging ideas.

Fourth, the use of virtual laboratories and simulation environments helps future teachers develop the ability to connect experiments with theoretical analysis. For example, on the topic "Ohm's Law," students may use PhET Circuit Construction Kit, while on the topic "Magnetic Field," they may use GeoGebra PhysLab or Algodoo to conduct scientific analysis in an interactive environment. As a result, students acquire skills in computer-based experiment modeling, data analysis, graph construction, and drawing scientific conclusions [21].

Fifth, the multimedia approach makes it possible to explain complex physical processes in visual and auditory forms during theoretical lessons. For example, creating animations on the topic "Interference of Light" using Adobe Animate or working with 3D models on the topic "Superposition of Waves" engages students not only as listeners, but also as active participants in the educational process.

In addition, interactive testing and assessment systems also play an important role in the development of ICC. For example, conducting quizzes on the topic "Heat Quantity and Conservation of Energy" through Quizizz or Kahoot! helps students adapt to digital assessment systems. On the topic "Mechanical Oscillations," organizing online surveys through Mentimeter stimulates interactive thinking.

In conclusion, innovative approaches aimed at developing information and communication competence increase the effectiveness of theoretical lessons, adapt teachers to the digital world, and foster modern technological thinking in students. PhET simulations, Canva design platforms, Google Workspace, ChatGPT, virtual laboratories, online testing systems, and interdisciplinary cloud collaboration all contribute significantly to the development of future teachers' ICC potential. As a result, they become specialists capable of effectively managing information in the educational process, applying digital tools for pedagogical purposes, and thinking innovatively.

Results.

As a result of developing methodological, scientific, information-communication, and reflective competencies during theoretical lessons, future teachers demonstrate comprehensive professional,

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intellectual, and personal growth. These competencies are closely interconnected, and their harmonious development ensures the formation of a physics teacher who is prepared for the modern educational environment, capable of independent thinking, and able to function as an innovative specialist.

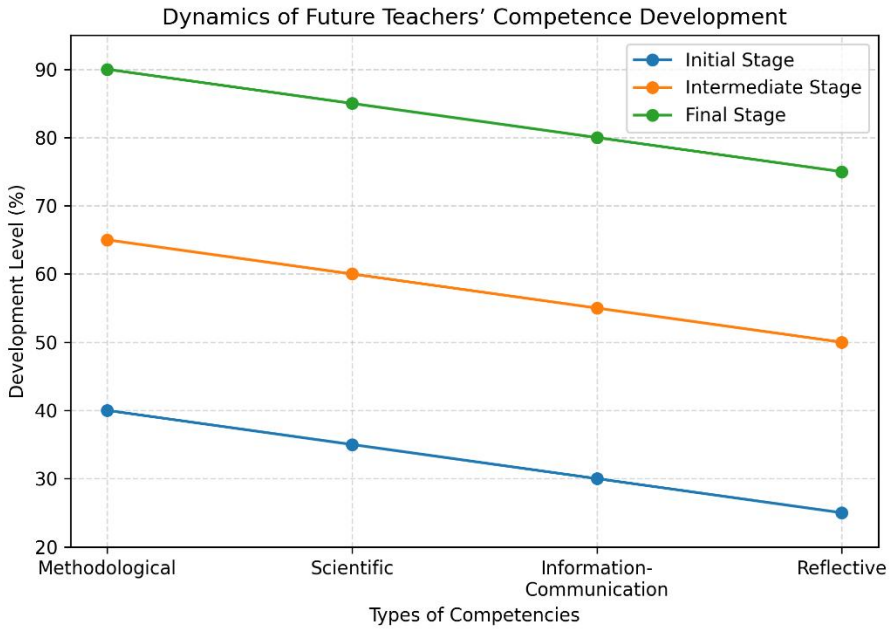


Figure 3. Indicators of methodological, scientific, information-communication, and reflective competencies of future physics teachers at the initial, intermediate, and final stages

1. Results Obtained Through the Development of Methodological Competence

The development of methodological competence strengthens the future teacher's ability to organize the educational process effectively (Figure 4). As a result, the teacher:

1. **learns how to plan lessons and correctly define educational goals and objectives;**
2. **consciously selects methods, tools, and strategies appropriate to the educational process;**
3. **applies a differentiated approach by taking into account students' individual abilities and learning capacities;**
4. **is able to independently design problem-based, interactive, and integrated lessons;**
5. **is able to explain complex theoretical concepts of physics using simple, real-life examples.**

Figure 4. Types of Methodological Competence Development

As a result, such a teacher increases students' activity during the lesson process, raises the effectiveness of education to a higher level, and strengthens learners' interest in physics. The teacher

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becomes a methodologically well-prepared specialist who analyzes each lesson, tests innovative ideas, and continuously improves professional practice.

2. Results Obtained Through the Development of Scientific Competence

When scientific competence is developed, a teacher becomes not only a transmitter of knowledge, but also a specialist capable of conducting scientific research and reasoning based on evidence. As a result, the future teacher:

First: learns how to analyze scientific problems, formulate hypotheses, and prove them scientifically;

Second: develops skills in planning experiments and observations on a scientific basis, as well as processing and analyzing data;

Third: becomes capable of modeling physical laws and expressing results through graphs and formulas;

Fourth: masters research methodology and applies scientific approaches in teaching practice;

Fifth: develops new ideas based on interdisciplinary integration.

Such a teacher instills scientific thinking, evidence-based reasoning, and experimental analysis in students during the educational process. They become not merely a teacher, but a pedagogical researcher capable of understanding the methodological essence of physics as a science.

3. Results Obtained Through the Development of Information and Communication Competence

As a result of the development of information and communication competence, a teacher becomes capable of organizing lessons in an interactive, visual, and demonstrative form. The teacher delivers educational materials through multimedia resources, virtual laboratories, simulation programs, electronic testing platforms, and online communication systems. Such an approach strengthens students' abilities for independent inquiry, analytical thinking, and solving problems on a scientific basis. In addition, the teacher gains the ability to create online learning environments, work with electronic resources, select and process scientific information, and develop communication culture through digital tools. As a result, opportunities arise for the effective use of time and resources in the educational process, increasing students' activity, and guiding them toward independent learning.

In general, the development of information and communication competence modernizes the professional thinking of future teachers and shapes them into innovative, creative, and analytically oriented specialists. In this way, a model of a teacher emerges who is capable of working in a modern digital environment, possesses a high level of technological literacy, and establishes effective communication with students.

Thus, when these competencies are developed, a physics teacher becomes not merely a transmitter of knowledge, but also a researcher, analyst, creative thinker, and digitally competent educator. Such a teacher is able to analyze each lesson, remains open to innovation, and becomes a specialist who keeps pace with the requirements of modern education.

REFERENCES

1. Karimov, I. A. The Strategy of New Uzbekistan: Directions for Modernizing the Education System. – Tashkent: Uzbekistan Publishing House, 2021.
2. President of the Republic of Uzbekistan. Resolution No. PQ–5847 "On the Concept for the Development of the Higher Education System until 2030." – Tashkent, 2019.
3. Abdullayeva, M. "Competency-Based Approach in Physics Education." Education and Innovation Scientific Journal, No. 2, pp. 45–51, 2023.

4. Hasanov, B. “Interactive Approaches to Developing the Methodological Training of Future Physics Teachers.” Journal of Physics Education Methodology, No. 3, pp. 27–33, 2022.
5. Qahhorov, S. Q. “Ways to Improve the Methodological System of Theoretical Lessons in Physics Education.” Innovations in Education Scientific Journal, No. 4, pp. 58–64, 2022.
6. Qahhorov, S. Q. “Methodological Foundations for Developing Reflective Competence in Future Physics Teachers.” Journal of Theory and Practice of Physics Education, No. 2, pp. 41–48, 2023.
7. Aminov, A. A. “The Importance of Problem-Based Learning Approaches in Developing the Scientific Competence of Physics Teachers.” Innovative Technologies in Teacher Training Scientific Collection, No. 1, pp. 73–79, 2022.
8. Aminov, A. A. “The Effectiveness of Applying Information and Communication Technologies in Theoretical Lessons.” Innovations in Pedagogical Education Journal, No. 3, pp. 88–93, 2023.
9. Experience and Education. – New York: Simon & Schuster, 2017.
10. The Reflective Practitioner: How Professionals Think in Action. – New York: Basic Books, 1983.
11. Jonbekova, D., & Qodirov, U. “The Use of Modern Methods in Developing Teachers’ Reflective Activity.” Pedagogical Innovations Journal, No. 4, pp. 112–118, 2021.
12. Mind in Society: The Development of Higher Psychological Processes. – Cambridge, MA: Harvard University Press, 1978.
13. Niyazov, S. “The Role of Project-Based Learning Technologies in Developing the Scientific Competence of Physics Teachers.” TSPU Scientific Collection. – Tashkent, 2020.
14. A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom’s Taxonomy of Educational Objectives. – New York: Longman, 2001.
15. Hamidov, A., & Sodiqova, N. “Methodology for Developing Digital Literacy in Future Teachers.” Innovative Pedagogy Journal, No. 6, pp. 83–90, 2023.
16. Polat, E. S. Innovative Pedagogical Technologies. – Moscow: Akademiya Publishing House, 2018.
17. Tursunova, G. “The Use of Portfolios in Developing Teachers’ Reflective Competence.” Education Transformation Journal, No. 1, pp. 67–73, 2024.
18. Experiential Learning: Experience as the Source of Learning and Development. – New Jersey: Prentice Hall, 1984.
19. Mukhammedova, R. “Scientific Foundations for Applying the Competency-Based Approach in Theoretical Lessons.” Pedagogical Mastery Journal, No. 5, pp. 21–27, 2023.
20. European Commission. Key Competences for Lifelong Learning – European Reference Framework. – Luxembourg: Publications Office of the European Union, 2020.
21. Abduraimova, G. Psychological and Pedagogical Foundations for Developing Reflective Activity in Future Teachers. – Tashkent: Fan Publishing House, 2021.