

## PEDAGOGICAL CATEGORIES AND THE SPECIFICS OF THEIR MANIFESTATION IN MEDICAL EDUCATION

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### Abstract

The article analyzes the fundamental pedagogical categories — upbringing, education, and training — and their unique manifestation within the medical educational environment. Special attention is paid to the transformation of traditional didactic principles into clinical competency models. Pedagogical categories represent the fundamental concepts underlying the educational process, determining its structure, content, and direction. The main pedagogical categories include teaching, learning, education, development, and personality formation. In the system of medical education, these categories acquire specific characteristics due to the need to train highly qualified professionals capable of effectively applying theoretical knowledge in clinical practice. The specificity of pedagogical categories in medical education lies in the integration of theoretical instruction with practice-oriented training, as well as in the development of clinical thinking, professional responsibility, and ethical values. Medical education is aimed not only at knowledge transfer but also at fostering critical thinking, communication skills, and decision-making abilities under conditions of uncertainty. The educational (upbringing) component plays a crucial role in shaping the professional identity of future physicians, including the development of empathy, adherence to deontological principles, and compliance with bioethical standards. Modern trends in medical education, such as the competency-based approach, digitalization of learning, simulation-based training, and interdisciplinary integration, enhance the importance of pedagogical categories and transform the ways they are implemented. Therefore, studying the specifics of their manifestation contributes to improving the quality of medical training and optimizing educational strategies.

**Keywords:** Pedagogy, medical education, clinical competence, professionalism, deontology.

## ПЕДАГОГИЧЕСКИЕ КАТЕГОРИИ И ОСОБЕННОСТИ ИХ ПРОЯВЛЕНИЯ В МЕДИЦИНСКОМ ОБРАЗОВАНИИ

### Аннотация

В статье анализируются фундаментальные педагогические категории — воспитание, образование и обучение — и их уникальное проявление в среде медицинского образования. Особое внимание уделяется трансформации традиционных дидактических принципов в модели клинических компетенций. Педагогические категории представляют собой фундаментальные понятия, лежащие в основе образовательного процесса и определяющие его структуру, содержание и направленность. К ключевым категориям педагогики относятся обучение, воспитание, образование, развитие и формирование личности. В системе медицинского образования данные категории приобретают особую специфику, обусловленную необходимостью подготовки высококвалифицированных специалистов, способных эффективно применять теоретические знания в клинической практике. Особенность проявления педагогических категорий в медицинском образовании заключается в интеграции теоретической подготовки с практико-ориентированным обучением, формировании клинического мышления, профессиональной ответственности и этических ценностей. Обучение в медицинских вузах направлено не только на передачу знаний, но и на развитие критического мышления, коммуникативных навыков и способности к принятию решений в условиях неопределенности. Воспитательный компонент играет важную роль в формировании профессиональной идентичности будущего врача, включая развитие эмпатии, деонтологического поведения и соблюдение принципов биоэтики. Современные тенденции медицинского образования, такие как компетентностный подход, цифровизация обучения, симуляционные технологии и междисциплинарная интеграция, усиливают значимость педагогических категорий и трансформируют формы их реализации. Таким образом, изучение специфики проявления педагогических категорий в медицинском образовании способствует повышению качества подготовки специалистов и совершенствованию образовательных стратегий.

**Ключевые слова:** Педагогика, медицинское образование, клиническая компетенция, профессионализм, деонтология.

## PEDAGOGIK KATEGORIYALAR VA ULARNING TIBBIY TA'LIMDA NAMOYON BO'LISH XUSUSIYATLARI

### Annotatsiya

Maqolada asosiy pedagogik kategoriyalar — tarbiya, ta'lim va o'qitishning tibbiy ta'lim muhitidagi o'ziga xos namoyon bo'lishi tahlil qilinadi. An'anaviy didaktik tamoyillarning klinik kompetensiya modellariga transformatsiyasiga alohida e'tibor qaratilgan. Pedagogik kategoriyalar ta'lim jarayonining asosiy tushunchalari bo'lib, uning tuzilishi, mazmuni va yo'nalishini belgilaydi. Asosiy pedagogik kategoriyalarga ta'lim, tarbiya, bilim berish, rivojlanish va shaxsni shakllantirish kiradi. Tibbiy ta'lim tizimida ushbu kategoriyalar o'ziga xos xususiyatlarga ega bo'lib, bu yuqori malakali mutaxassislarni tayyorlash, ularning nazariy bilimlarini amaliy faoliyatda qo'llay olish qobiliyatini shakllantirish zarurati bilan bog'liq. Tibbiy ta'limda pedagogik kategoriyalarning namoyon bo'lishi nazariy bilimlarni amaliy mashg'ulotlar bilan uyg'unlashtirish, klinik fikrlashni rivojlantirish, kasbiy mas'uliyat va axloqiy qadriyatlarni shakllantirish orqali namoyon bo'ladi. Ta'lim jarayoni faqat bilim berish bilan cheklanmay, balki talabalarni tanqidiy fikrlashga, samarali muloqot qilishga va noaniq vaziyatlarda to'g'ri qaror qabul qilishga o'rgatadi. Tarbiya jarayoni esa bo'lajak shifokorning kasbiy identifikatsiyasini shakllantirishda muhim rol o'ynaydi, jumladan, empatiya, deontologiya va bioetika tamoyillariga rioya qilishni o'z ichiga oladi. Zamonaviy tibbiy ta'limda kompetensiyaga asoslangan yondashuv, raqamli texnologiyalar, simulyatsion o'qitish va fanlararo integratsiya pedagogik kategoriyalarning ahamiyatini yanada oshirmoqda va ularning amalda qo'llanish shakllarini o'zgartirmoqda. Shu sababli, ularning o'ziga xos xususiyatlarini o'rganish tibbiy kadrlar tayyorlash sifatini oshirish va ta'lim jarayonini takomillashtirishga xizmat qiladi.

**Kalit so'zlar:** Pedagogika, tibbiy ta'lim, klinik kompetensiya, professionallik, deontologiya.

### Introduction

Pedagogy in medical education is not merely a transfer of biological or chemical knowledge; it is a complex process of forming a professional personality capable of

making decisions under uncertainty. The relevance of this study is driven by the rapid modernization of healthcare and the shift toward competency-based education.

The primary categories of pedagogy — Education, Training, and Upbringing — acquire specific "clinical" features in medical universities. Unlike general pedagogy, where the teacher-student interaction is central, medical pedagogy introduces a third critical element: the Patient. This "pedagogical triangle" (Teacher-Student-Patient) defines the unique nature of the educational process. The goal of this thesis is to examine how these categories adapt to the demands of modern medicine and the principles of evidence-based practice. Historically, medical education was based on the apprenticeship model. Today, it is a scientifically grounded pedagogical system. The primary problem is the "dualism" of medical pedagogy: it must satisfy the requirements of academic standards while simultaneously ensuring patient safety. The manifestation of pedagogical categories in this field is unique because the object of the student's future professional activity is a human being's life and health. Therefore, pedagogy here is intertwined with bioethics, psychology, and high-tech simulation.

## Methods

This research is based on a systematic analysis of pedagogical theories applied to the medical field. First, the research utilizes the *Andragogical Model* developed by Malcolm Knowles. This method is fundamental to our study as it acknowledges that the subjects of medical education are adult learners. The methodology focuses on the transition from traditional pedagogy (teacher-centered) to andragogy (learner-centered), where the pedagogical categories manifest through self-directed inquiry and immediate practical application. By applying this model, we analyzed how the "Training" category shifts its focus from the instructor's delivery to the student's clinical problem-solving capabilities.

Second, the study incorporates the *Systematic Literature Review and Comparative Analysis*. We examined contemporary pedagogical doctrines from both Western and regional (Central Asian) perspectives. This allowed for a comparative evaluation of how "Upbringing" is defined in different medical cultures—ranging from Western "Professional Identity Formation" to the regional emphasis on medical deontology and ethical traditions. This comparative lens helps identify universal manifestations of pedagogical categories while respecting local educational contexts.

We utilized the following methodological frameworks:

1. **Andragogical Approach:** Recognizing that medical students are adult learners who require self-directed learning and immediate practical application of knowledge (Knowles' Theory).

2. **Miller's Pyramid:** To evaluate how the category of "Training" transitions from "Knows" to "Does" in a clinical setting.
3. **Comparative Analysis:** Contrasting traditional classroom-based instruction with modern methods such as Problem-Based Learning (PBL) and Simulation-Based Education (SBE).
4. **Literature Review:** Analyzing modern standards of medical education (WFME standards) and their pedagogical foundations.

## Results

The manifestation of pedagogical categories in medicine exhibits the following specific characteristics:

1. **The Category of "Training"** In medicine, training is characterized by "clinical immersion." The didactic process is moved from the classroom to the clinic.
  - **Bedside Teaching:** This is the pinnacle of medical training where the student learns semiotics and communication directly from a practitioner.
  - **Simulation Technology:** Pedagogical training now includes a "safe failure" zone using high-fidelity manikins, allowing for the repetitive practice of invasive procedures without risk to patients.

## 2. The Category of "Education"

Medical education focuses on the development of **Clinical Reasoning**. It is not just about memorizing facts but about the synthesis of information to form a diagnosis.

- **Integration:** Horizontal integration (linking anatomy with surgery) and vertical integration (linking basic science with clinical practice) are the core pedagogical strategies.

**3. The Category of "Upbringing"** In the medical context, upbringing is synonymous with *Professionalism and Deontology*.

- It involves the formation of empathy, stress resistance, and ethical boundaries.
- The "Hidden Curriculum" plays a vital role here: students adopt the values and behaviors of their mentors through observation, making the personality of the professor a primary pedagogical tool.

## Discussion

The shift from "pedagogy" (child-leading) to "andragogy" (adult-leading) remains a topic of debate. While basic sciences require a more structured, pedagogical approach, clinical years demand high levels of autonomy.

A significant challenge in medical pedagogy is the dual role of the educator. Most medical teachers are practicing physicians first and educators second. This often leads to a "trial by fire" approach to teaching, which modern pedagogy seeks to replace with structured feedback and objective structured clinical examinations (OSCE).

Furthermore, the digitalization of medicine (AI diagnostics, telemedicine) requires the addition of a new pedagogical sub-category: Digital Health Literacy. Another point of discussion is the impact of technology. Does the use of AI and VR in training weaken the "upbringing" component of human empathy? Our analysis suggests that while technology enhances the "Training" category (technical skills), the "Upbringing" category (human touch and ethics) still requires direct human-to-human interaction between the mentor, the student, and the patient.

Furthermore, the "Pedagogical Triangle" (Teacher-Student-Patient) remains the gold standard. However, the increasing legal and ethical protections for patients make "bedside teaching" more difficult. This necessitates the development of "standardized patient" programs, which is a new manifestation of pedagogical methodology in the 21st century.

## Conclusion

Pedagogical categories in medical education are transformed by the clinical environment, high social responsibility, and the need for lifelong learning. Training is no longer just "passing on information"; it is the "co-construction of clinical experience." For effective medical education, it is essential to:

- Institutionalize "Teach the Teacher" programs for clinicians.
- Balance simulation with real-world patient contact.
- Focus on the "Upbringing" category to prevent professional burnout and ethical erosion.

The effective manifestation of these categories requires a "dual competence" from the faculty: they must be excellent clinicians and skilled educators. The future of medical pedagogy lies in the harmonious blend of digital simulation and traditional clinical ethics, ensuring that the doctor of the future is both technically proficient and deeply humane.

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