SECTION 2.
ACADEMIC CULTURE OF THE TEACHER-RESEARCHER AS A VALUE FOUNDATION OF AN INNOVATIVE EDUCATIONAL ENVIRONMENT

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THE TEACHER-RESEARCHER AS AN AGENT IN THE FORMATION OF THE PROFESSIONAL AND ETHICAL CULTURE OF FUTURE DOCTORS WITHIN THE SYSTEM OF SUSTAINABLE DEVELOPMENT IN MEDICAL EDUCATION

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INTRODUCTION

Contemporary medical education is developing amid profound social, technological and humanitarian transformations that are changing how the quality of future doctors' professional training is understood. Graduates of medical universities are expected not only to possess sound professional knowledge and clinical skills, but also to communicate appropriately, act responsibly, and make evidence-informed and ethically balanced decisions. Studies of medical professionalism emphasise that the professional identity of a future doctor develops gradually. It emerges through the internalisation of professional values, behavioural norms and models of interaction within the educational environment.[1] In this context, the professional and ethical culture of a future doctor is not an additional component of the educational process. It becomes one of its system-forming characteristics.

This issue becomes particularly significant in the context of the sustainable development of medical education. Its renewal cannot be reduced to digitalisation, the modernisation of educational programmes, the

[1] Findyartini A., Greviana N., Felaza E., Faruqi M., Afifah T. Z., Firdausy M. A. Professional identity formation of medical students: a mixed-methods study in a hierarchical and collectivist culture. *BMC Medical Education*. 2022. Vol. 22. Article 443. DOI: https://doi.org/10.1186/s12909-022-03393-9

introduction of innovative technologies or integration into the European academic area. In contemporary scholarly discourse, the sustainable development of higher medical education is associated with the integration of ethical and socially responsible professional values into the training of future specialists.[2] In this chapter, the sustainability of medical education is understood not only through the renewal of educational content, but also through the value-based organisation of the academic environment. Within such an environment, professional competence is combined with a humanistic orientation, academic integrity with clinical responsibility, and research thinking with ethical reflection.

From this perspective, the figure of the teacher-researcher acquires particular importance. In a medical university, the teacher-researcher does not merely transmit educational content or monitor students' acquisition of knowledge. This figure also represents, for students, a culture of scholarly inquiry, academic integrity, professional communication and responsible attitudes towards the person. Studies of the professional identity of medical students show that a considerable part of professional values is acquired through both explicit and implicit processes of socialisation within the academic community. Therefore, the influence of the teacher-researcher is realised not only through the content of teaching. It is also embedded in the everyday organisation of the educational process: the nature of assignments, the style of assessment, work with error, the organisation of reflection, support for students' autonomy and the personal example of academic conduct.

The teacher-researcher can be understood as an agent in the formation of the professional and ethical culture of future doctors, since they combine educational, scholarly and value-normative functions. As a teacher, they organise learning as a process of professional formation. In the role of researcher, the teacher-researcher cultivates a culture of evidence, critical analysis and intellectual honesty. As a bearer of academic culture, the teacher-researcher sets value-based reference points for professional responsibility, respect for the person and the inadmissibility of simulated competence. This unity corresponds to an understanding of the professional identity of a future doctor as a multifactorial process. In this process, educational experience, the academic environment, individual values and professional obligations gradually converge into an integrated professional position. For this reason, the professional and ethical culture of future doctors does not emerge automatically through the study of deontology, bioethics or clinical disciplines. It requires purposeful pedagogical

[2] Niemi M., Tiittanen H., Vuori-Kemilä A., Kukkonen P. Nursing and medical students' views on their knowledge of and education in the Sustainable Development Goals in higher education. *BMC Medical Education*. 2025. Vol. 25. Article 516. DOI: https://doi.org/10.1186/s12909-025-06991-5

organisation, through which ethical principles acquire personal and professional meaning for the student.

The aim of this chapter is to provide a theoretical justification for the role of the teacher-researcher as an agent in the formation of the professional and ethical culture of future doctors within the framework of sustainable development in medical education. To achieve this aim, the chapter reveals the academic culture of the teacher-researcher as a foundation for the professional and ethical formation of medical students. It identifies the pedagogical mechanisms through which the teacher-researcher influences the development of a responsible professional position. It also demonstrates the connection between academic integrity, research culture, ethical reflection and the sustainability of medical education.

Within this study, the teacher-researcher is considered a value-based mediator between the academic culture of the university and the future professional culture of the doctor. This approach makes it possible to shift the focus from the formal teaching of ethical norms to the analysis of pedagogical conditions, practices and modes of interaction. Through these, the student gradually moves from the external assimilation of professional rules to the internal acceptance of ethical responsibility as part of their own professional identity.

1. The Academic Culture of the Teacher-Researcher as a Basis for the Professional and Ethical Formation of the Future Doctor

Academic culture in a medical university operates not only through official rules, curricula or declared ethical requirements. Its real influence becomes visible in the everyday organisation of the educational process: in the teacher's way of working with knowledge, the nature of assessment, the response to error and professional communication with students. Studies of the hidden curriculum in medical education emphasise that students internalise professional values and behavioural models not only through the official content of learning. They also acquire them through informal rules, repeated patterns of interaction and academic socialisation within the educational environment.[3] For this reason, the future doctor is shaped not only by declared ethical norms, but also by the everyday academic experience through which they gradually assimilate the boundaries of responsibility, the value of evidence and the inadmissibility of simulated competence.

In the work of the teacher-researcher, academic culture acquires a specific professional meaning. It combines scholarly competence,

[3] Parra Larrotta S., Hernández Rincón E. H., Niño Correa D., Jaimes Peñuela C. L., Romero Tapia A. E. Effects of the hidden curriculum in medical education: scoping review. *JMIR Medical Education*. 2025. Vol. 11. e68481. DOI: https://doi.org/10.2196/68481

methodological literacy and responsible pedagogical conduct. Its manifestations include respect for the intellectual work of others, correct work with sources, well-grounded judgement, transparent academic requirements and readiness to recognise the limits of one's own knowledge. In studies devoted to academic integrity in higher medical education, it is understood as a characteristic of the educational environment grounded in honesty, trust, fairness, respect and responsibility. These characteristics are particularly important for medical education, since the future professional activity of a doctor is directly connected with human life, patient trust, responsibility for decisions and the moral cost of error.

In the training of future doctors, the teacher's academic culture performs a dual function. On the one hand, it ensures the quality of the educational process by orienting students towards accuracy, evidence, disciplined thinking and honesty in the performance of learning and research tasks. On the other hand, it has formative potential, since the teacher's personal example enables students to assimilate broader models of professional responsibility. The teacher's attention to facts, correctness of judgement, insistence on argumentation and rejection of superficiality gradually shape students' understanding of appropriate future medical conduct. Contemporary studies of medical professionalism emphasise that it includes not only ethical virtues, but also behavioural skills and the professional identity of the future doctor.[4] This provides grounds for considering the teacher's academic culture as a factor that influences both the quality of learning and the student's professional self-determination.

The specificity of medical education lies in the fact that academic dishonesty cannot be viewed merely as a violation of academic discipline. Cheating, formal completion of tasks, incorrect use of sources, simulation of practical skills, or superficial assimilation of clinically significant material may have delayed professional consequences. In the future, such behavioural patterns may develop into inattention to evidence, failure to recognise one's own incompetence, a formal attitude towards the patient or decision-making without proper analysis of the situation. Therefore, academic culture in a medical university should be regarded as an initial form of professional ethics, not only as a system of rules for academic behaviour.

The teacher-researcher occupies a special place in this process. Their influence is not limited to the transmission of educational information, since they simultaneously represent a culture of scholarly inquiry, professional responsibility and ethical interaction. A teacher who combines pedagogical

[4] Farooq M., Hashim M. J., Alhosani S., Alalawi A. M., Alalawi O. M., Qandilo K. A., Hafeez U., Cevik A. A. Professionalism and professional identity in medical students: a cross-sectional mixed-methods analysis of correlation and progression. *Frontiers in Medicine*. 2025. Vol. 12. Article 1650073. DOI: https://doi.org/10.3389/fmed.2025.1650073

and research activity demonstrates to students that medical knowledge is not a fixed body of facts. It is constantly clarified, verified, argued, correlated with new data and dependent on an honest intellectual attitude. This position is essential for forming a doctor capable of thinking in an evidence-based manner and acting responsibly.

The academic culture of the teacher-researcher influences the future doctor through a system of educational practices. First, this concerns the culture of setting learning tasks. When tasks require not the mechanical reproduction of material, but analysis, justification, comparison of positions and work with clinically or professionally significant situations, the student enters a space of responsible thinking. In such learning, it is important not only to find the correct answer. The student must also explain the path towards it, recognise the limits of their own conclusion and assess the possible consequences of a decision. At this point, academic culture moves into the professional and ethical dimension.

The culture of assessment is no less important. In medical education, assessment should not be reduced to the registration of errors or the formal control of knowledge. It must perform developmental and ethical functions. It should help the student understand that an error is not a reason for humiliation, but a source of professional analysis; that ignorance must not be concealed; and that responsible recognition of one's own limits is a sign of professional maturity. A teacher-researcher who builds assessment on the principles of fairness, transparency and reasoned feedback forms in students an experience of responsible attitudes towards the results of their own activity. Reviews of research on the assessment of professionalism in medical education show that feedback and multisource assessment can support the development of professional behaviour. However, they require clear criteria and institutional consistency.[5]

An important component of academic culture is the teacher's attitude towards scientific truth. Medical practice requires not only knowledge of protocols, but also the ability to analyse information critically, distinguish evidence-based data from assumptions and understand the limitations of research. It also requires the ability not to substitute authority or personal conviction for scientific argumentation. If the teacher-researcher consistently demonstrates this culture of thinking in the educational process, this fosters not only students' research competence, but also their ethical responsibility in the use of knowledge.

[5] Jaramillo Villegas C., Hernandez Rincon E. H., Gallego Beltran J. C., et al. Assessment of professionalism in undergraduate and graduate medical education: a scoping review. *BMC Medical Education*. 2025. Vol. 25. Article 1295. DOI: https://doi.org/10.1186/s12909-025-07756-w

In this context, the connection between academic integrity and the future doctor's professional identity becomes particularly significant. Academic integrity should not be perceived by students only as an external university requirement related to text checking, the originality of written work or the prohibition of cheating. Its pedagogical meaning lies in forming the ability to be honest with oneself, the teacher, colleagues, patients and the profession. For this reason, the teacher-researcher carries this norm not only when speaking about integrity. They do so above all when organising learning in accordance with it: selecting tasks that prevent mechanical copying, creating situations for argumentation of one's own position and explaining the value of authorship, correct citation and independent work. In such an environment, academic integrity ceases to function as a punitive mechanism. It acquires the meaning of a pedagogical condition for the professional formation of the future doctor.

However, the connection between academic integrity and the future doctor's professional identity is not limited to the requirement to complete learning tasks honestly. It gradually develops into the student's ability to comprehend the moral meaning of their own actions, recognise the limits of competence and distinguish real knowledge from the external performance of awareness. At this point, the academic culture of the teacher-researcher acquires a reflective dimension. It helps the student not only to comply with professional norms, but also to understand why these norms matter for future medical practice.

Studies of the role of reflection in the professional development of medical students show that it supports the comprehension of personal experience, professional difficulties and one's own position in future medical activity. In medical education, such reflection has ethical meaning, since the future doctor must learn not only to act according to instructions. They must also relate a professional decision to specific circumstances, the patient's values, possible consequences and their own responsibility. In this process, the teacher-researcher does not impose a ready-made moral answer. Instead, they create conditions for responsible judgement in which knowledge, values and professional duty interact with one another.

The academic culture of the teacher-researcher is a value-based foundation for the professional and ethical formation of the future doctor. It ensures the unity of scholarly rigour, integrity, pedagogical exactingness, reflection and the humanistic orientation of the educational process. Within this unity, professional ethics is assimilated not as a set of declarative provisions, but as a way of thinking and acting that gradually becomes embedded in the student's professional identity. The role of the teacher-researcher assumes strategic importance within the system of sustainable development in medical education. Through the teacher-researcher's

activities, the professional and ethical culture of the future doctor emerges within an academic environment organised around the principles of honesty, evidence, responsibility and respect for the person.

2. The Teacher-Researcher as an Agent of Change in the Formation of the Professional and Ethical Culture of Future Doctors

The agency of the teacher-researcher in medical education is manifested not so much in the mere use of new teaching methods as in the capacity to transform the inner quality of a student's professional formation. An innovative technology, a professional case, a discussion, a research task or a digital resource acquires pedagogical value only when it helps the future doctor move from the reproduction of knowledge to responsible judgement. It should also support the transition from a formal answer to an awareness of the consequences of professional decision-making, and from external compliance with requirements to the internal acceptance of a professional norm. Scenario-based teaching of professionalism also confirms that professional formation requires more than the assimilation of concepts. It requires the student's involvement in situations of moral choice, behavioural analysis and responsible decision-making.[6] It is precisely in this transition that the teacher-researcher appears not as an executor of an educational programme, but as a subject who changes the student's professional consciousness.

The first important vector of such influence may be described as a transition from the transmission of educational content to the problematisation of a professional situation. In the traditional logic of teaching, students often work with material as a set of facts, rules, algorithms or ready-made answers. This is insufficient for medical education, since future medical practice almost always involves choice in specific circumstances. Such a choice requires consideration of the patient's condition, the limits of one's own competence, available evidence and possible risks. It also involves communicative conditions and the moral consequences of the decision. Therefore, the task of the teacher-researcher is not only to explain the content of a topic to the student, but also to reveal its professional complexity. In this context, a learning task ceases to be a simple means of checking knowledge. It becomes a pedagogical situation in which the student must identify the problem, determine the conditions for its solution, justify a position and correlate their own conclusion with possible consequences for the person. If a task is based solely on reproducing information, it supports memory but does not always develop professional thinking. If, however, it requires analysis, argumentation,

[6] Ashcroft J., Warren P., Weatherby T., Barclay S., Kemp L., Davies R. J., Hook C. E., Fistein E., Soilleux E. Using a scenario-based approach to teaching professionalism to medical students: Course description and evaluation. *JMIR Medical Education*. 2021. Vol. 7, No. 2. e26667. DOI: https://doi.org/10.2196/26667

comparison of positions and work with uncertainty, it opens the ethical dimension of medical knowledge. It is here that educational content begins to contribute to the formation of responsibility.

One of the most productive ways of such problematisation is the professionally oriented case. In this logic, it is not merely an "interesting method", but a way to bring the student closer to the real complexity of medical practice. Its value lies not in its narrative quality, nor in the imitation of a clinical situation as such. Rather, it lies in the fact that it compels the future doctor to think simultaneously in several dimensions: professional, evidence-based, communicative and ethical. Even when a case concerns diagnosis, treatment or prevention, it almost always involves issues of trust, informed consent, confidentiality, respect for dignity, teamwork or responsibility for error. When a professional case takes the form of a discussion of an ethical dilemma, it reveals especially clearly the connection between knowledge, communication, cooperation and responsible professional decision-making. Studies of team-based learning in medical ethics emphasise the formative potential of group analysis of ethical situations.[7]

At the same time, case-based work loses its formative potential if it is reduced to the search for a single "correct" answer. For professional and ethical formation, the final version of the decision is less important than the process of reasoning that leads to it. What matters is how the student defines the problem, which arguments they consider convincing, whether they see the patient's interests, whether they recognise the limits of their own knowledge, and whether they can explain the moral cost of the chosen action. In this sense, the teacher-researcher serves as a moderator of professional judgement. This role does not involve replacing the student's thinking with a ready-made moral formula. Rather, it involves helping the student distinguish an emotional reaction from an argued position, and formal knowledge from a responsible decision.

The second vector may be defined as a transition from control of the answer to reflective comprehension of the professional decision. In medical education, knowledge control is necessary, but it does not exhaust the task of professional formation. A student may correctly name an ethical principle without understanding how it operates in a situation of uncertainty. They may know the norm of respect for the patient without recognising how this norm is expressed in a word, an intonation, a decision, the acknowledgement of an error or refusal to act beyond one's competence. Studies of teaching ethics, law and decision-making skills in medical education emphasise the need not only to assimilate ethical principles, but also to apply them in

[7] Alizadeh M., Bahrami S., Saeedi Z., Khaninezhad L. Outcomes of team based learning in teaching medical ethics: a systematic review. *BMC Medical Ethics*. 2025. Vol. 26. Article 184. DOI: https://doi.org/10.1186/s12910-025-01329-8

complex and ambiguous situations.[8] Therefore, reflection becomes a mechanism through which an external requirement is transformed into a personal professional position.

The reflective organisation of learning presupposes that the student not only answers the teacher's questions, but also learns to question their own way of thinking. Why do I choose this particular decision? What consequences may it have for the patient? What do I not know in this situation? Am I ready to acknowledge an error? Where is the boundary between confidence and overconfidence? Such questions are not an addition to professional training. They form the inner discipline of the future doctor, without which knowledge may remain technically correct but professionally dangerous.

It is important that the space of reflection should not turn into the free expression of impressions without professional criteria. Its strength lies in combining safety with exactingness. The student must be able to express doubt, acknowledge incomplete understanding, discuss error and engage with moral complexity without fear of humiliation. At the same time, their judgement must rely on knowledge, arguments, professional norms and an analysis of consequences. This balance is fundamental: without safety, the student conceals uncertainty; without exactingness, reflection loses its professional depth.

The meaning of assessment also changes within this field. If assessment records only the correctness of the answer, it supports an external result. If it takes into account how this result has been reached, it becomes an instrument for fostering responsibility. This includes independence, integrity, argumentation, correct work with sources and the ability to recognise the limits of a conclusion. For the future doctor, it is important not only to "know the answer", but also to arrive at it responsibly. This is the ethical meaning of value-oriented assessment.

The third vector is connected with the transition from the teacher's personal example to an integrated environment of academic responsibility. The personal example of the teacher-researcher is indeed significant, but it should not be understood only as the teacher's individual moral quality. Studies of role modelling in medical education emphasise that students assimilate professional behaviour through observation, imitation and evaluation of real models of interaction in academic and clinical environments.[9] In medical education, example becomes effective when it is

[8] Faihs L., Neumann-Opitz C., Kainberger F., Druml C. Ethics teaching in medical school: the perception of medical students. *Wiener klinische Wochenschrift*. 2024. Vol. 136, No. 5–6. P. 129–136. DOI: https://doi.org/10.1007/s00508-022-02127-7

[9] Patel R. K., Mirza J., Van de Ridder J. M. M., Rajput V. Role modeling in medical education: a twenty-first century learner's perspective. *Medical Science Educator*. 2023. Vol. 33, No 6. P. 1557–1563. DOI: https://doi.org/10.1007/s40670-023-01930-9

embedded in the everyday rules of academic interaction: in the honesty of assessment, the correctness of comments, the demand for proper sources, respect for authorship, rejection of formal task completion and the culture of discussing error. Students assimilate ethical orientations not from isolated declarations, but from repeated experience of how it is customary to work with knowledge, people and responsibility in a given environment.

For this reason, pedagogical modelling of professional responsibility is not declarative but structural in nature. A teacher who speaks about academic integrity but allows superficiality in their own requirements weakens the formative effect of learning. A teacher who demands evidence but replaces argumentation with authority sends students a contradictory signal. A teacher who appeals to the humanism of medicine but communicates with students through humiliation or devaluation destroys the link between the declared norm and real academic practice. This is where the special responsibility of the teacher-researcher lies: their professional conduct either confirms or contradicts the values they seek to form.

An integrated environment of academic responsibility is formed not only through the teacher's personal example, but also through the culture of working with knowledge, information and evidence. Research culture in this environment performs the role of an intellectual basis for professional ethics. It is not limited to the preparation of student research papers, participation in conferences or mastery of methodological procedures. For the future doctor, it means the ability to work critically with information, verify data, understand the limits of evidence and avoid decisions based on random sources, authoritative claims or stereotypes. Such a culture is ethical in nature, since the quality of knowledge directly affects the quality of professional action.

In this context, the problem of simulated competence arises. The future doctor must learn to distinguish situations in which they genuinely possess knowledge from those in which their understanding remains incomplete. Hidden ignorance in medicine may be more dangerous than an openly recognised professional limit. A teacher-researcher who forms a culture of honest intellectual inquiry teaches the student not to mask uncertainty with pseudo-knowledge, not to fear complexity and not to replace responsibility with the formal completion of a task.

Communicative culture is an equally important element of such an environment. It cannot be regarded as a secondary pedagogical condition, since future medical activity is a profession of interaction. The way in which students learn to speak, listen, argue, disagree, accept criticism and comment on another person's answer gradually forms their future model of interaction with patients, colleagues and the medical team. Studies of communication skills training through role models show that students acquire professional communication not only through formal classes. They also acquire it by

observing the behaviour of teachers and clinical mentors[10]. Authoritarian, indifferent or formal models of communication may become fixed as acceptable professional norms. By contrast, respectful dialogue, responsibility for what is said, attentiveness to another person's position and reasoned disagreement create the basis for ethical communication in medicine.

A comparison of these vectors shows that the mechanisms for forming professional and ethical culture do not operate in isolation. The problematisation of educational content reveals to the student the complexity of a professional situation. Reflection helps them comprehend their own position within that situation. Assessment consolidates responsibility for the way a result is achieved. Research culture forms an honest attitude towards knowledge. The communicative environment translates ethical principles into the practice of interaction. Their strength lies not in the number of methods used, but in the coherence of the pedagogical logic.

The agency of the teacher-researcher is manifested precisely in the ability to combine these mechanisms into an integrated educational strategy. If they operate separately, their influence remains situational. If, however, they are included in the general logic of professional training, the student gradually moves from external fulfilment of educational requirements to the internal acceptance of professional and ethical norms. This path requires consistency, pedagogical exactingness, academic honesty, openness to dialogue and a systemic connection between learning, research and professional values.

Within the system of sustainable development in medical education, the teacher-researcher as an agent of change performs a strategic function. They do not merely respond to educational challenges, but also form future doctors' capacity to act in conditions of complexity, uncertainty and high social responsibility. As a result, innovations in medical education acquire value-based meaning, while professional training is not reduced to technological renewal. It becomes a space for forming a doctor for whom knowledge, evidence, integrity, respect for the person and responsibility for decisions constitute a unified professional position.

3. The Professional and Ethical Culture of Future Doctors as a Strategic Resource for the Sustainable Development of Medical Education

The sustainable development of medical education cannot be reduced to the renewal of educational programmes, digitalisation, international integration or the expansion of universities' research activity. These processes are important, yet by themselves they do not guarantee the

[10] Douglas A. H., Acharya S. P., Allery L. A. Communication skills learning through role models in Nepal: What are medical students really learning? A qualitative study. *BMC Medical Education*. 2021. Vol. 21. Article 625. DOI: https://doi.org/10.1186/s12909-021-03049-0

humanistic quality of professional training. Medical education becomes genuinely sustainable when it is able not only to respond to external challenges, but also to preserve the value-based core of the medical profession. This core includes respect for human dignity, responsibility for decisions, an honest attitude towards knowledge and readiness to act in an evidence-based and ethical manner under conditions of complexity.

In this dimension, the professional and ethical culture of the future doctor appears not as a separate outcome of the educational process, but as a strategic condition of its sustainability. It shows whether the system of medical education is capable of forming not only a competent performer of professional algorithms, but also a specialist who understands the moral weight of their own decisions. Medical practice always goes beyond technical action, since it is connected with the person, their vulnerability, trust, right to safe care and dignified treatment. For this reason, professional training must provide not only knowledge and skills, but also readiness to use them responsibly, humanely and within the limits of one's own competence.

The professional and ethical culture of future doctors performs an integrative function within the system of sustainable development in medical education. It connects professional competence with moral responsibility, academic integrity with future clinical conduct, and innovation with the humanistic meaning of medicine. Owing to this, education does not fragment into separate blocks of knowledge, skills, technologies and normative requirements. It is built as an integrated space for the professional formation of the future doctor. In such a space, students gradually assimilate not only what they need to know, but also how and why this knowledge should be used responsibly.

The sustainable development of medical education requires a rejection of a formal understanding of ethical training. If ethics is presented only as a list of principles, norms or professional prohibitions, it easily remains an external regulator of behaviour. For the future doctor, it is important not merely to know what is correct, but to be able to act responsibly when the situation is complex, incomplete, emotionally tense or professionally risky. In this sense, professional and ethical culture is not an addition to competence. It is a way of giving competence its human, social and professional direction.

This issue becomes especially significant in the context of the rapid renewal of medical knowledge. The contemporary doctor works in an environment in which information constantly changes, sources may be contradictory and professional decisions often require rapid data analysis. Under such conditions, the sustainability of medical education is determined not only by its ability to renew teaching content. It is also determined by whether it forms in the future doctor a responsible attitude towards

knowledge. Superficial use of information, uncritical acceptance of claims or the substitution of evidence with authority may have not only cognitive, but also ethical consequences.

Digitalisation intensifies this problem. It opens new opportunities for access to knowledge, simulation-based learning, distance interaction, academic mobility and interuniversity cooperation. At the same time, the digital environment creates new risks: mechanical copying of information, uncritical use of artificial intelligence, formalisation of independent work and reduced responsibility for authorship and the reliability of results. Therefore, the digital competence of the future doctor should be understood not only as a technical skill, but as the ability to act responsibly in the information space.

In this context, the teacher-researcher performs the role of a value-based guide in a digitalised educational environment. Their task is not to oppose humanistic education to technological development. Rather, it is to help students see the limits and possibilities of digital tools. Artificial intelligence, electronic resources, simulation platforms and distance formats can strengthen learning. However, they must not replace professional judgement, independent thinking or the personal responsibility of the future doctor. The sustainability of medical education depends on the ability to combine technological openness with ethical self-control.

The professional and ethical culture of future doctors also has an institutional dimension. It cannot be formed solely through the efforts of an individual teacher or within a single academic discipline. It requires coherence between the university's educational policy, academic rules, assessment culture, research standards and everyday interaction. If a university declares ethical values but tolerates formalism, double standards or indifference to the quality of academic work, professional and ethical training loses its persuasiveness. A sustainable educational environment must be one in which declared norms are confirmed by real academic practice.

This is where the teacher-researcher acquires special significance as an agent of sustainable development. They connect the strategic goals of the university with concrete educational actions through which students assimilate professional orientations every day. Their influence does not always take the form of a large-scale innovation. Yet it is precisely through learning tasks, discussion of errors, demands for evidence, support for autonomy and respect for the student's personality that the culture of the future doctor is formed. The sustainable development of medical education begins not only with reforms, standards and technologies. It also begins with everyday pedagogical decisions that make professional ethics a real part of learning.

The post-war context of Ukrainian education gives this issue additional urgency. Medical education under conditions of social instability, loss,

migration, psychological tension and the need for societal recovery performs not only a professional training function, but also a humanitarian one. It must form a doctor capable of working with a traumatised society, remaining attentive to human vulnerability, acting under conditions of limited resources, maintaining professional dignity and preserving ethical orientations in difficult circumstances.

In such a context, the professional and ethical culture of the future doctor acquires social significance. It concerns not only the individual behaviour of a specialist, but also the quality of medical care, the resilience of the health care system, the humanisation of social relations and the restoration of social trust. A doctor who acts ethically, responsibly and in an evidence-based manner supports not only a particular patient, but also a broader space of public safety. Therefore, the formation of such a culture in a medical university may be regarded as a contribution to post-war recovery and the sustainable development of society.

It is important to avoid a declarative understanding of sustainability. In medical education, sustainability is realised not through general slogans, but through the system's capacity to consistently support the values without which the medical profession loses public trust. For this reason, the sustainability of medical education should be measured not only by the renewal of programmes or technologies. It should also be assessed by the extent to which the educational environment can reproduce a professional culture oriented towards human dignity, quality of care and responsibility to society.

The professional and ethical culture of the future doctor, in the dimensions of sustainable development in medical education, is the result of the integrated interaction of academic culture, pedagogical responsibility, research integrity and the humanistic orientation of the educational process. It cannot be fully measured only by test indicators, since it is manifested in the student's way of thinking, attitude towards knowledge, responsibility for their own actions and ability to see the patient not as an object of professional intervention, but as a person. This is where its particular complexity lies. At the same time, it is also where its strategic value for medical education becomes visible.

From this perspective, the professional and ethical culture of future doctors becomes one of the criteria of genuine sustainability in medical education. It shows whether the educational system is capable not only of adapting to external changes, but also of preserving the value-based core of the medical profession. The teacher-researcher as an agent of its formation ensures the connection between the academic culture of the university, the student's professional formation and the social mission of medicine. Through such activity, medical education gains the capacity not

merely to reproduce professional personnel, but to form doctors to whom human health, dignity and life may be entrusted.

CONCLUSIONS

The theoretical analysis conducted provides grounds for considering the teacher-researcher as one of the key actors in the formation of the professional and ethical culture of future doctors. In contemporary medical education, their role is not limited to the transmission of educational content, the organisation of knowledge acquisition or the introduction of innovative technologies. The teacher-researcher forms an academic environment in which students gradually assimilate not only professional competences, but also ways of responsible, evidence-based, honest and humanistically oriented professional thinking.

The academic culture of the teacher-researcher serves as a value-based foundation for the professional and ethical formation of medical students. It is manifested in attitudes towards knowledge, research integrity, reasoned judgement, correct work with sources, the culture of assessment, responses to error and support for student autonomy. In medical education, these characteristics have particular significance, since academic dishonesty, formal assimilation of material or simulated competence may later transform into dangerous patterns of medical conduct.

The influence of the teacher-researcher on the professional and ethical culture of future doctors is realised through an integrated pedagogical logic. Its essence lies in the transition from the transmission of knowledge to the problematisation of professional situations, from control of the answer to reflective comprehension of the decision, and from the teacher's personal example to the creation of an environment of academic responsibility. Within this logic, the learning task, the professional case, assessment, research work, communication and work with error become interconnected means of forming the ethical maturity of the future doctor.

The professional and ethical culture of the future doctor is an important condition for the sustainable development of medical education. Its significance lies not only in the formation of the student's individual professional behaviour, but also in the preservation of the value-based core of the medical profession under conditions of technological change, digitalisation, social instability and post-war recovery. The sustainability of medical education cannot be measured only by the renewal of programmes, methods or digital tools. It is revealed in the capacity of the educational system to form a doctor who combines professional competence with responsibility to the patient, society and their own profession.

The generalisation of the analysis makes it possible to define the teacher-researcher as a value-based mediator between the academic culture of the

university and the future professional culture of the doctor. Their activity creates conditions in which the student moves from external fulfilment of educational requirements to the internal acceptance of professional responsibility. It also supports the transition from knowledge of ethical rules to the ability to act ethically in complex professional situations, and from formal possession of information to its responsible use in future medical practice. This constitutes the strategic significance of the teacher-researcher for the sustainable development of medical education and for the training of a doctor to whom society may entrust human health, dignity and life.

SUMMARY

The chapter examines the problem of forming the professional and ethical culture of future doctors within the system of sustainable development in medical education. It substantiates that the professional and ethical formation of a medical student cannot be reduced to the assimilation of ethical norms, deontological principles or separate academic disciplines, since it requires the integrated organisation of the academic environment. The role of the teacher-researcher is revealed as that of an actor who influences the formation of the future doctor's ethical maturity through academic culture, research integrity, pedagogical responsibility and professional communication. The pedagogical logic of this influence is defined through several transitions: from the transmission of knowledge to the problematisation of a professional situation, from control of the answer to reflective comprehension of the decision, and from the teacher's personal example to the creation of an environment of academic responsibility. It is shown that the professional and ethical culture of the future doctor is not only an individual characteristic of a specialist, but also a strategic resource for the sustainability of medical education. The chapter emphasises its importance for preserving the value-based core of the medical profession under conditions of digitalisation, technological change, social instability and post-war recovery. It concludes that the teacher-researcher acts as a value-based mediator between the academic culture of the university and the future professional culture of the doctor, ensuring the student's transition from the external assimilation of norms to the internal acceptance of professional responsibility.

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