COMPARATIVE ANALYSIS OF THE TRADITIONAL TEACHING AND MENTORING APPROACH IN HYGIENE TRAINING

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Abstract: *The purpose of this article is to conduct a comparative analysis of the effectiveness of traditional and mentoring approaches in teaching hygiene at medical universities. The importance of modern pedagogical methods in forming practical and preventive skills in future doctors is extremely crucial today. In this study, the author compares the results of applying traditional lectures and mentoring methods based on problem situations by dividing students into groups. During the research, the approach to the educational process and the level of academic achievement were evaluated based on specific criteria. The scientific novelty of the article lies in the fact that, for the first time, it is comprehensively and scientifically proven that the mentoring approach in hygiene classes significantly increases students' ability to independently solve medical and environmental problems and work in a team compared to the traditional method. The results demonstrated that a guiding mentorship system increases interest in the subject much more effectively than the passive reception of information. In conclusion, the mentoring system develops students' deep analytical thinking and positively changes academic performance indicators. Therefore, to improve the quality of hygiene education, it is highly recommended to widely introduce active learning methods and mentoring into educational programs.*

Keywords: *Hygiene education, traditional teaching, mentoring approach, pedagogical effectiveness, medical students, problem-based learning, independent thinking.*

INTRODUCTION

In the modern system of medical education, the training of competitive and highly qualified personnel is one of the priorities. In particular, in the teaching of Hygiene and medical ecology, it is important to develop preventive thinking of students [1]. Traditional teaching methods are mainly aimed at communicating theoretical knowledge, sometimes lame in the full-fledged formation of the skills of future doctors to work in a team and make independent decisions in problem situations. Therefore, the issue of introducing active teaching technologies into the educational process, including the mentoring (master-apprentice) approach, is one of the extremely urgent requirements of today [2].

The mentoring approach allows the student not only to give dry knowledge, but also to direct his personal and professional development, to directly control his practical skills in clinical and hygienic problematic situational (PBL) classes. The world practice of Medical Education suggests that modern manifestations of the teacher-student tradition dramatically increase the level of student assimilation of material and increase their motivation for the educational process [3]. This article will highlight the practical results

of these approaches in the framework of comparative pedagogical research work carried out between 120 3rd year students (Control and experimental groups) of the Medical University in the academic year 2024-2025.

Object of study: the organization and implementation of hygiene training in higher medical educational institutions is an educational and pedagogical process.

The subject of the study: the influence of traditional and mentoring approaches to the teaching of Hygiene on the indicators of knowledge acquisition of students, the formation of practical skills, as well as their comparative characteristics.

The purpose of the study: consists in the development of scientifically based conclusions and recommendations on improving the quality of medical education based on a comparative analysis of the pedagogical effectiveness of applying the traditional teaching and mentoring approach in hygiene training.

Objectives of the study: to achieve the goal set, the following specific tasks were set:

Analysis of domestic and foreign scientific pedagogical literature on the specifics of traditional education and the mentoring system in medical education [4];

Comparison of the appropriation indicators (in control and experimental groups) of practical classes performed between students in the traditional way and with the help of mentoring;

Study of students ' skills for independent analytical thinking and solving practical hygienic problems on the basis of special assessment criteria;

Based on the results of the resulting research, the development of methodological guidelines for the targeted introduction of the mentoring method into the curriculum of Hygiene and medical ecology Sciences.

Literature review. Analysis of research on the methodology of teaching hygiene in medical education shows that the traditional approach has been the main foundation in the formation of fundamental knowledge for many years. B. from local scientists.M.In his works, Mamatkulov emphasizes the strength of the theoretical base in teaching public health and hygiene issues, the importance of strict mastery of sanitary and hygienic rules for the preventive activities of a doctor [1]. However, in the traditional method, information is transmitted mainly unilaterally (from teacher to student), which can limit students ' skills in solving practical problems independently.

Foreign scientists, including R.Johnson and A.Smith has analyzed the benefits of the mentoring (mentoring) system in medical education in his research [3]. In their opinion, the mentoring approach allows an individual approach to the student and helps to form a personal “professional portrait”of the student. Western researchers assess mentoring as not only academic support, but also as a key catalyst that promotes student critical thinking (critical thinking). In this regard, J.Innovative methods such as the “Spices” model pioneered by Harden have shown the dominance of student-centered learning (student-centered learning) in teaching applied subjects such as hygiene [5].

Local explorer N.X.While studying the issues of the application of innovative technologies in medical pedagogy, khodaev separately notes the place of problematic situational classes (PBL) in increasing student activity [2]. Also, A.A.In his work, Kadyrov

scientifically substantiated the effectiveness of harmonizing the master-apprentice system with modern information technologies in higher education [4]. The research of these scientists mainly focuses more on the importance of general pedagogical methods and their theoretical aspects.

In contrast to existing literature and research, the specificity of the issue being brought about by the author is that the mentoring approach is researched here precisely in the context of the complex laboratory and instrumental examination methods inherent in the science of Hygiene and medical ecology. Whereas in previous works mentoring was mainly analyzed for Clinical Sciences (therapy, surgery), in this work the "referrer-diagnostic" function of mentoring in mastering Preventive Medical Sciences is for the first time a comparative analysis. The author, while maintaining a strong theoretical base of traditional teaching, offers it a model of integrating interactive elements of mentorship (e.g., Joint Sanitary control in facilities, evaluation of laboratory analysis based on real keys).

Also in this study, for the first time, based on the results of an experiment with 120 students, competencies of the "traditional" and "mentoring" groups, such as not only academic assessments, but also their environmental-hygienic forecasting ability, are compared among themselves. This serves to shape hygiene education not simply as a data set, but as a live practical process.

Methodology. In the implementation of this research, a systematic approach, comparative-pedagogical analysis and statistical assessment methods were used. Competency approach and principles of personality-oriented education were selected in medical education as the methodological basis of the study [1]. The research process was carried out during the 2024-2025 academic year with the participation of 120 3rd year students studying at the Department of "Hygiene and medical ecology" of the Medical Academy.

In the study, the comparative method of comparison was used as the main method. For this, the students were divided into two groups: the control group (60 individuals) and the experimental group (60 individuals). In the control group, classes were conducted on the basis of the traditional Curriculum (Lecture and standard practical lessons). In the experimental group, however, a mentoring approach was implemented, with one mentor attached to every 10-12 students, and classes organized in a combination of Problem-Based Learning (PBL) and Team-Based Learning (TBL) methods [2].

When implementing the mentoring approach, the following phased methodology was used:

Diagnostic stage: the initial level of knowledge and motivation of Students for science was determined through tests and questionnaires.

Interactive phase: real keys on hygienic problems (e.g. water quality analysis or school hygiene) in the experimental group were discussed in small groups under mentor's leadership.

Control and evaluation: in both groups, lesson acquisition indicators were evaluated on the basis of the same criteria — theoretical knowledge, practical skills (laboratory work) and the ability to solve situational issues [4].

When analyzing the results of the study, a method of comparing quantitative and qualitative indicators was used. In particular, students ' practical skills in sanitary inspection of hygienic facilities and preparation of conclusions were evaluated in a 5-point system, and the data obtained was processed using variational statistical methods (using the T-criterion of the procedure). This made it possible to determine the level of reliability of the mentoring methodology used [3].

The study also used methodologically “observational” and "survey" techniques. During the mentoring process, the students ' culture of teamwork, ability to engage in communication, and level of Professional Responsibility were recorded through observation cards. Such a complex methodology served to draw clear conclusions on how to compare the strengths and weaknesses of traditional teaching with the benefits of mentoring and optimize the educational process.

Analysis and results. The results obtained during the study showed that there were significant discrepancies between traditional and mentoring approaches in students ' acquisition of knowledge and acquisition of practical skills. The final control work in the control (n=60) and experimental (n=60) groups resulted in an analysis of the average score factor. According to statistics, in the group in which the mentoring approach was applied, the overall appropriation rate was 18.5% higher than in the control group [1].

The results of the assessment of hygienic competencies of students are reflected in the table below:

Evaluation criteria	Control group (average score)	Experimental group (average score)	Growth factor (%)
Acquisition of theoretical knowledge	3.8	4.2	10.5%
Applied laboratory skills	3.5	4.4	25.7%
Analysis of situational issues	3.2	4.6	43.7%
Total average	3.5	4.4	25.7%

As can be seen from the table data, the greatest difference was observed in the direction of “analysis of situational issues” and “practical skills”. This situation confirms that in hygiene classes, the mentoring system develops not only the memory of students, but also the ability to work analytically and instrumentally [3]. In the traditional group, it has been found that while students answer theoretical questions well, they have difficulty solving a real sanitary and hygienic problem (e.g., complex evaluation of microclimate results) as the main problem.

Another problem identified during the study was the presence of a passive attitude towards science in 45% of students in traditional teaching. In the mentoring group, however, there was a significant increase in “learning motivation” due to student

interaction and individual guidance by the mentor [2]. When expressed in diagram form, 85% of the students in the experimental group reported high levels of satisfaction with the classes, while in the control group the rate was 52%.

The analysis revealed the following systemic problems in hygiene education:

- ✓ Lack of time allocated for working with equipment in practical training;
- ✓ The weakness of the reverse connection between students and the teacher in the traditional way;
- ✓ Lack of systematic mentoring control in the organization of independent work of students [4].

Statistical analysis (using the T-criterion of the procedure, $p < 0.05$) proved that the differences obtained are not random, but the result of the effectiveness of the mentoring approach. This reduces traditional lecture classes in teaching hygiene to show the need to focus more on mentor-led practical-case training in small groups.

Conclusion. Comparative analysis conducted in hygiene training shows that the mentoring approach has significantly higher efficiency compared to the traditional teaching method. As a result of the study, an increase in the practical skills acquisition rate of students in the experimental group by 25.7% confirms the suitability of this method for medico-preventive disciplines [1]. In conclusion, the mentoring system forms in students not only fundamental theoretical knowledge, but also important professional competencies such as independent analysis and decision-making.

The problems identified during the study-student passivity in practice, low tool skills, and interruptions between theory and practice — were demonstrated to be remediable by the systematic introduction of the mentoring system [3]. Also, working in small groups under the guidance of a mentor develops the ability to predict medical-environmental situations, increasing the collective responsibility of students.

Based on the results obtained and the identified problems, the following suggestions and recommendations will be put forward:

Optimization of the training plan: to increase the share of practical classes in hygiene and medical ecology and to organize at least 50% of them in the form of mentoring and problematic situational (PBL) classes [4].

Creating a mentor school: to form a group of mentors in the departments, consisting of experienced professors and young researchers, as well as to conduct special seminars on improving their pedagogical skills.

Case bank enrichment: development and application to the educational process of a set of interactive "case-stades"prepared on the basis of real sanitary cases and laboratory analysis on each hygienic Topic [2].

Improvement of the assessment system: the introduction of a multi-criterion system for assessing not only theoretical knowledge of students, but also their activity in the mentoring process, skill in the use of laboratory equipment and analytical conclusions.

These proposed measures take the quality of teaching hygiene in medical universities to a new level and serve to radically improve the practical training of future doctors in the field of Preventive Medicine.

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