

Medical University Experiences Regarding Emergency Remote Teaching (ERT): Evidence from Ukraine



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Abstract

The study's main aim is to examine the opportunities and challenges of Emergency Remote Teaching (ERT), focusing on the students of O.O. Bogomolets National Medical University during the COVID-19 pandemic. To conduct the study, an ex-post facto design of the quantitative research method was employed. Data were collected through a survey from 120 students and 15 teachers. For that, an instrument was developed to collect the responses related to face-to-face learning and online learning. The results reveal various technological, pedagogical, and social challenges. This study intends to examine the students' and teachers' experience of emergency remote teaching ERT in the wake of the COVID-19 Pandemic, especially among Ukrainian university students. This study aims to know the advantages and disadvantages of online learning with individuals' demographics, interests, and satisfaction. This research assists in developing new techniques of education by focusing on the pros and cons of any methodology.

Keywords

education;
educational applicants;
educational program;
health management;
medical university;
modern education;
online learning;

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1 Introduction

Background of the study

Here In the medical university, the administration assures the quality of training and teaching by providing the education using different strategies and processes; academic integrity is the topmost priority. Therefore, impressive training is given to the student for their successful career, monitoring the pedagogical activities and personnel, organizing an active management system to play its role actively, and providing proper information in the system alert a comprehensive atmosphere of education is established, that also increase the quality of pre-vocational training (Dubrovina et al., 2019). The University council will introduce tools, criteria, or procedures to evaluate the effectiveness of activities and processes of education and the profession of teachers. They design the format of exams, surveys, research, questionnaire, and educational applicants assessed (Ishida et al., 2012). They scrutinize the result and keep it secured, the step to head in rendering the results and overcoming the shortcomings. It distinguishes the methodology, and interpretation of criteria and signifies the dynamic characteristic of a system, examining the procedures to circulate data and assures the improvement in a monitoring system. It introduces multi-plans to regulate the educational program by maintaining academic integrity (Hung et al., 2008; Stanek et al., 2015). The role of a curator is to assess all the activities of students and evaluates their performances to get the attention of parents. And the teacher discovers the standard of achievements in evaluating subject-based material, control cuts, existing, thematic, and last assessments for annual and semesters that also improve the educational and academic achievement (Internal quality assurance in times of COVID-19, 2021). A wide-ranging educational work is utilized to develop the cognitive skills of students that help them to learn social behavior and other activities in the classroom likewise cohesion. By reviewing the literature about the history of Ukrainian University, it appears that it is one of the leading successful and effective institutes which reach the height of honorary success at the international level. It was added to the associated school of UNESCO in 2000. A “world Green schools” member in Toronto in 1998 and a partner of RAS in 1997. Later on, it was awarded a great honor as it was recognized as: “Flagman in Science and Education” in national rating. The honorary title was awarded as the “leader in modern education” for its modernized ways of educating the students by using innovative pedagogical styles. It was also awarded the silver and gold medal nominations at different forums (Bogomolets National Medical University - Study MBBS in Ukraine, 2021).

Impact of COVID-19 on medical university

The University was affected in the pandemic period when learning was greatly affected, and the education of students proved to be a great challenge for the whole world. Even then, the transition is considered difficult for each state in the field of education, which is the journey from conventional pedagogical teaching to remote work of technology (Evans, 2008; Chick et al., 2020). In the pandemic of COVID-19, 185 million students are affected. However, the hindrance lies in the implementation of emergency remote learning is the lack of communication and understanding between teachers and students. Ukraine is the leading territory to experience emergency remote learning and teaching to educate the students through broadcasting video lectures, social media, television, and online learning platforms. Edcamp Ukraine organization established learning opportunities for teachers and professionals to meet the remote functions and discuss their experiences during the pandemic of COVID-19. Ukraine also organized the campaign “Schools; We Are Ready” with UNICEF to educate teachers, professionals, students, parents, and administrators on safety measures and convince them to be having sustainable learning in 2020-21 (The impact of COVID-19 on education – recommendations and opportunities for Ukraine, 2021).

Literature review

There is extensive literature that presents different perspectives of online learning and its methodology from the twentieth century. However, several new research-related issues emerged during the COVID-19 Pandemic

when emergency online learning became a necessity in all education. Therefore, this study also focuses on emergency remote teaching.

Introduction of emergency remote teaching

Emergency Remote Teaching ERT is the term coined by (Distance education and emergency remote teaching: An analysis of the Italian school system affected by the COVID-19 pandemic, 2021) for online education. They claimed the difference in ERT and current online learning because these were not preplanned in online courses and, as a substitute for on-campus courses, are changed online until the troublesome circumstances never get back to peace. The aim of ERT neither should be to cultivate established on-campus learning to online education nor remote learning. The significant feature that differentiates ERT from online learning is the teaching strategies designed in an emergency; advanced and rational ideas are the keystone in achieving certain goals and accomplishing the desired targets. Charles Hodges recommends the assessment of ERT initiatives. They deny the comparing method of ERT with classroom learning, prefer to evaluate the success rate from the different perspectives given by shareholders of an educational association, are analyzed from student perceptions such as course results, faculty meetings, establishment setup, worth, and quality.

Evaluation of emergency remote teaching (ERT)

This research study aimed to examine the quality of ERT from O.O. Bogomolets National Medical University students and teachers' experiences, what they think about its advantages and disadvantages, and compare online and conventional modes of teaching. Elements of these three variables are depicted in figure 1.

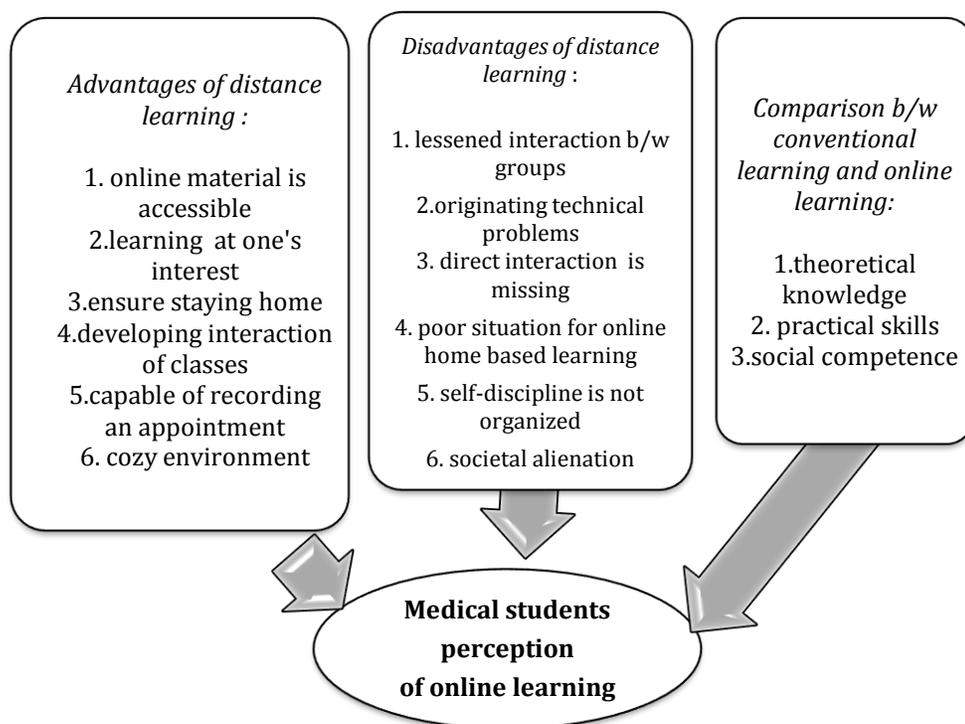


Figure 1. Flow chart of emergency remote teaching

Advantages of online learning

Online learning and teaching are innovative pedagogical techniques adopted by a few institutes. The different teaching formats can recognize by using technology. Likewise, LMS Learning Management System delivers e-

learning lectures and lessons. It works as an “engine” that enhances the learning process. It comprises an organized system of activation and functioning by administering, managing, delivering, and creating courses and notifications (Khan & Yairi, 2018; Lee et al., 2014). It ensures access to learning materials, enables students to learn at a distance, develops the flow of onboarding procedures, and keeps proper numerical data of learners (Drake, 2021). In the pandemic of COVID-19 different video conferencing software is used for online teaching and learning.

Public and private educational institutes shifted to Emergency Remote Teaching (ERT) to maintain students' access to education by developing interaction among them. The online platform opens the way to achieve intrinsic goals; self-efficacy for learning enhances skillful performance. Computational thinking is using technology to solve critical problems by organizing the data and analyzing it through stimulations in abstraction. Its main function is to identify, interpret and implement the solution in the operative system (Esteve-Mon et al., 2020). Mathematics and sciences are also the fields of learning. It teaches new skills in designing the algorithms and decomposing the problems. It may assist us in case of disaster recovery. The acknowledgment of computational thinking assists in using the software at the time of pandemic in seeking online learning. Online learning has a quality experience comprised of some of the aspects explored by (Shraim, 2020) depicted in figure 2 (Shraim, 2020).

Disadvantages of online learning for students

One of the challenges is the untrained staff that not all the teachers were ready for the shift to online teaching because of their limited digital skills and online teaching experience. Most of the teachers adopt digital technologies with minor skills. Even 60% of the teachers of the European Union EU did not feel well or prepared to use digital technology to educate the students (Perifanou et al., 2021). The instability of the network is a negative aspect of remote learning that creates a breach in the students' learning. The poor network develops an inability to understand a significant idea or concept during the lecture, or he may be unable to object, not comprehending the point (Hua & Liu, 2021).

The disadvantage of zoom is the security problem. Little information about the operating system can create lapses in securing data that cannot maintain privacy in the secured data. Video conferences are strictly monitored for security issues. Zoom vulnerabilities are reported in the communities like users' identity is disclosed, personal identification may trace, and unauthorized access may increase the students' interest in hackers. It will introduce cyber behavior by using the online platform Zoom (Long & Khoi, 2020).

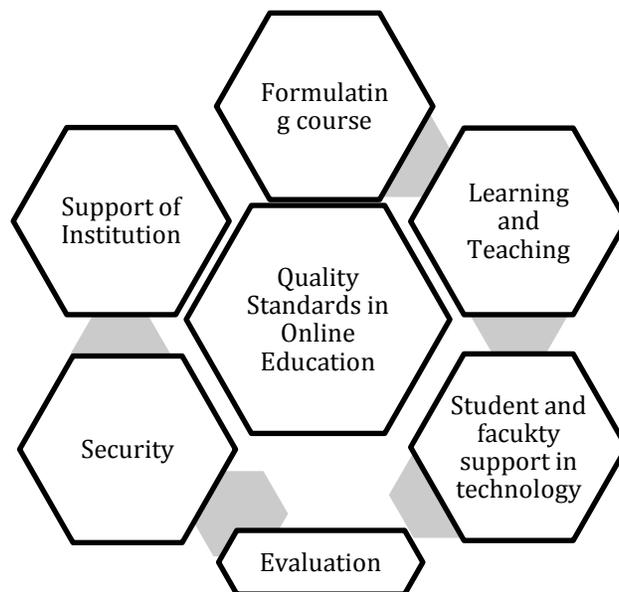


Figure 2. Features of Quality Standards in Online Learning

Comparison between conventional pedagogy and remote learning

The transition from face-to-face learning to online learning is considered to be a massive challenge to the world. It takes the shape of emergency distance education that remotely enhances learning and teaching. Online learning caused isolation for the students who felt relaxed and comfortable in the institute of their learning department (Moore et al., 2011; Sit et al., 2005; Panigrahi et al., 2018). They lose their campus interaction. This disconnection from their educators puts them in social alienation that spurs them to withdraw from their studies or affects their grades. On the other hand, online learning in an emergency can establish the achievement and skills of students; based on their level of interest. After 1980 are considered to be “digital natives” due to the digital environment in which they had grown up. Their aptitude to comprehend technology is very sharp. Moreover, the achievement is in a different mode in a different method of learning. Thus, face-to-face learning and cooperative learning are comprised of different results and achievements. In one case, face-to-face cooperative learning is very effective and produces agreeable results. While in Pechenkina and Aeschliman’s exploration reveals that students prefer the face-to-face method of learning. Nevertheless, some of them agreed that online cooperative learning was a valuable medium of learning (Mokliuk et al., 2022). The training comprised of various functions in schools that the Ukraine education administration also adopted. Experts agreed to organize the pre-occupational training and multi-degree system to modernize the teaching methodology in Ukraine. Quotes the ideology of (Tsekhmister, 2018) that the training considered to be significant in secondary schools comprises specific functions such as education that presents the qualified staff (Tsekhmister, 2018). Table 1 elaborates on the features and functions of pre-occupational training as below.

Table 1
Functions of preoccupation training

Features	Functions
futurological	region practiced the socio-cultural environment
research	assists to predict and analyzing the regional social culture
innovative	new modernized technology is introduced in the community
methodic	establishes the developed technologies of pedagogical psychological and social perspective to determine the expert's training
consulting	coherent use of resources on different grounds
professional orientation	motivates the students to choose specific programs for study by focusing on their aptitude
buffer	finds the resolution of several conflicts in various regions
rehabilitation	psychological rehabilitation is considered to be significant by keeping in mind the ecological issues
autodidactic	creative talent is collected from the member of an institution

2 Materials and Methods

To conduct the study, an ex-post facto design of the quantitative research method was employed. Data were collected through a survey from 120 students and 15 teachers. For that, an instrument was developed to collect the responses related to face-to-face learning and online learning.

Research methodologies

The only solution to activating the education system is distance learning or online learning during the pandemic when survival is a challenge in the risk of Coronavirus. Classroom learning can increase the risk to life, so all the education ministries and administrations took decisive action to shut the school. All of them agreed to introduce online learning and teaching. While creative, adaptive, and response is an open-ended game of interaction between curators and students. In this period of challenging circumstances, this study was

designed to research Emergency Remote Teaching by maintaining a focus on the medical students of universities, especially in Ukraine.

Design of the study

The research study explores the Emergency Remote Teaching (ERT) with the perception of medical students by interpreting through the technique of Quantitative methodology (Research Design, 2021). States, that quantitative research “employs strategies of inquiry such as experimental and surveys, and collect data on predetermined instruments that yield statistical data” (Research Design, 2021). This study employed an expo-facto design. It is the category of research design applied after the facts are collected without the researcher's involvement. It is an alternative to an experimental study where the cause and effects are determined in different variables. It also shares some of the basic logic of inquiry to determine the results ([Ex Post Facto Study, 2012](#)). Pandemic is also an example of expo-facto design in various research studies to find the fact by formulating the hypotheses. It is used to determine how dependent variables affect the independent variables. This study has employed this design to scrutinize the advantages and disadvantages of face-to-face learning and online learning as dependent and independent variables. This study developed a survey instrument to inquire about the responses of the participant by developing a questionnaire.

By following the quantitative research, this study followed the steps given below:

- Make a new paragraph
- Thinking about the objectives of designing a questionnaire
- The accessible choice of sample
- An impressive and comprehending questionnaire
- The assortment and tabulation of data in processing and developing the results.

Participants and sampling procedure

A total of 260 participants from Bogomolets National Medical University, Ukraine consented to participate in this study. The questionnaire was distributed through email and WhatsApp. The participant's demographic profile (age group, gender distribution) and academic years) were also recorded. Only 135 participants (120 students and 15 teachers) filled out the questionnaire and returned it. With their level of interest, they develop an understanding and interest in learning online and their behavior regarding emergency remote teaching varies with their pleasant and unpleasant experiences. Their interest could rely on their achievement in online distance learning in assessing how this remote learning assists them to learn and acquire new skills of learning at the time of the pandemic.

Instrument and statistics

A Questionnaire was developed by focusing on the pros and cons of remote learning comprised of 4 sections. A questionnaire is attached in appendix A of this study. Wherein the forms and sections required for collecting data were available for two months. The first section requires the material about the demographic data; age, and gender. Standard of course 1/ 4, aptitude regarding the acknowledgment of IT skills, and experience related to online learning to notice the nature of education. In the second section of the survey, the participants had to select the options regarding the advantages and disadvantages of online distance learning. The third section describes the responsive behaviors with the subjective opinions in experiencing face-to-face learning and online learning. The main focus is to determine the educational goals of knowledge, professional skills, and societal competencies by using the scale of five-point of Likert total estimates in the form of when 1=extreme inefficient and 5= extraordinary efficient and other random values. Respondents select the range. To determine the standard of agreeing and disagreeing the test is organized. The data by students and teachers are analyzed separately. The fourth section elaborates on the responsive attitudes of teachers and students by indicating their level of acceptance of online learning on the Likert scale. Again, there was a clear distinction in the responses of medical university students to the effectiveness of courses 1 and 4.

3 Results and Discussions

It develops the statistical data to compare opinions by using Mann Whitney U Test about conventional and online learning. A smaller amount and more talented students used the χ^2 and Mann-Whitney tests by comparing the answers. $p < 0.05$ is statistically significant. A total of 260 participants from Bogomolets National Medical University, Ukraine consented to participate in this study. Whereas, from all consented participants, 135 filled out the questionnaire and returned it through email and WhatsApp. Of these, 120 are students and 15 are teachers. The responses are recorded about the advantages and disadvantages of online learning. There is no significant response formed to notice the effectiveness of learning between face-to-face learning and online learning ($p = 0.46$) related to theoretical skills. Online learning has lesser efficiency than as compare to conventional teaching methods for enriching practical skills ($p < 0.001$) and societal competency ($p < 0.001$). E-learning was considered suitable by 80% of respondents. Among 135 participants there are 39 (29%) male and 96 (71%) female. The age group ranges from 18-30 years, where the average age is 22.65 according to quadratic deviation. Standard deviation (SD) = 2.15 calculated from the total $n = 135$. The participated students ($n = 120$) were from different academic years, where, 33%, 46%, and 21% are from the 3rd, 4th, and 5th years respectively. However, 54 (40%) respondents had a preceding distance learning experience, while 81 (60%) did not. The 76 (56%) respondents described their IT skills as good, 57 (41%) as moderate, and 2 (3%) as bad. The demographic profile of respondents studied ($n = 135$) are given in Table 2.

Table 2
Demographic profile of the sample of participants

Variables	n (%)
Gender	
Male	39 (29%)
Female	96 (71%)
Age	
18-20	120 (89%)
20-25	13 (8%)
25-30	2 (3%)
Academic Year	
3 rd	40 (33%)
4 th	55 (46%)
5 th	25 (21%)
Availability of previous distance learning experience (online)	
Yes	54 (40%)
No.	81 (60%)
IT skills	
High	76 (56%)
Moderate	57 (41%)
Low	2 (3%)

Emergency Remote teaching boosts online learning during the period of the pandemic. However, online learning was already established in different territories for online courses and distance learning. Besides these, emergency remote learning is an active medium of teaching that can be adopted in different regions by focusing on its pros and cons. Moreover, in the pandemic of COVID-19 new methodologies and techniques are evolved that can be interdisciplinary and holistic perspective to assess possible implications and social anticipation. The technological challenges occurred in the activation of ERT when insufficient bandwidth is the obstacle to learning. It disrupts the conferences and videos of lectures that creates a lapse in students' response. It is due to lack of internet connection that may increase inequalities in uneven access. Whereas pedagogical challenges are assessed by the physical behavior of students, in remote teaching to maintain the engagement of students is a real challenge along with the stimulation of their proactive behavior in online

learning. Societal challenges are obtained due to a lack of interaction between teachers and students. The claim is their demand for interaction and feelings of emotion that experts can do, which is unfortunately 100% not noticed in remote experience (Ferri et al., 2020; Harindranathan & Folkestad, 2019). Online distance learning opens the ways of choices for students, convenience to their needs, and personalization that assist them in effective teaching and learning process (Shamir-Inbal & Blau, 2021). Distance learning can be accessible using web-based teaching, learning, and design in a synchronic and asynchronism atmosphere. To enable innovative technological operation, pedagogical techniques, and management to fulfill the requirements (Engelbertink et al., 2020). Zhang (2020), elaborates on the “personal empowerment” felt by the teachers in proceeding with ERT because it works as an opportunity to come out from the box of conventional teaching and developed differently by adopting the creative teaching method. They recognize the sense of accomplishment and professional success in the responses of students and their positive attitude toward developing interaction among teachers and students. Pragmatically speaking, it is an understandable notion that the distance education system is a tentative debate to secure students' academic year. Koh et al. (2015), elaborate on distance education as the flexibility of time, place, and pace. Online distance education can increase the credibility of students by revising the lectures and lessons that already existed online. Thus, they revise it and clarify their doubts that assist in their learning to make it effective (Machado et al., 2019). Whereas many researchers consider online learning as lower quality than face-to-face learning, on the other hand, the transition to the online institution can seal this weak argument. Eventually, an impressive online education works as an inquiry in an ecosystem of student support that can be built up in time. At the same time, simple online content can be delivered easily and inexpensively. At the same time, the transition from online education to emergency learning can be an akin decision of professionals. The primary aim of ERT is not to create a robust educational ecosystem but plans to maintain the focus on the accessibility of temporary instruction and support that establishes a quick infrastructure to ensure the reliability during the period of emergency, likewise in the pandemic of COVID-19 (Distance education and emergency remote teaching: An analysis of the Italian school system affected by the COVID-19 pandemic, 2021). The focus of attention should not rely on the pros of accepting and practicing online learning at the time of crisis but also on developing and enhancing the quality of virtual courses in emergence (Hodges et al., 2021). Furthermore, the advantages and disadvantages of ERT and face-to-face learning are the main focus of this study: to enhance education quality. The aim is to educate the students by using innovative pedagogical techniques. COVID-19 brought significant changes worldwide. Likewise, in Ukraine, where the education system experienced challenging circumstances likewise, preplanning for the transition process was different. There were numerous technical problems, such as the absence of internet connections, electronic devices, and materials to seek online learning by using a network. Furthermore, the most significant teaching staff was not properly skillful aid of digitalization and distance learning and teaching (Affouneh et al., 2020; Bakhov et al., 2021). At the end of the discussion, this study examined the innovative techniques that enhance the quality of learning and teaching online. The success rate of online and distance learning can be measured in different mediums. However, that depends on how the instructor or learner perceives the successor. Outcomes of student learning could be the primary interest in the perspective of faculty. In contrast, it raises some questions about how the online teaching methodology assists students to get the intended knowledge, skills, and interest of that curator. From the students' perspective, the challenges such as interest, motivation, and engagement are directly related to the learner's success. So, the perception of success varies between faculty and students.

4 Conclusion

The year 2020 came with once-in-a-century health for every field and society. In the wake of the COVID-19 pandemic, the education sector had to confront the challenge of carrying out the teaching and learning progress with social distancing. Likewise, Ukrainian University switched to online learning. However, it was not an outcome long term planning. Instead, quick decisions were taken to continue the pre-occupational training of future medical students. A career needs more careful training as compared to various other occupations. This study mainly focuses on the medical students of the University noticing how they tackle the transition from face-to-face to Emergency learning. The transition was a challenge for the world, wherein Ukraine also decided to adopt an innovative methodology to secure students' academic year. However, they

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have insufficient resources to educate the student of University by using ERT. The pros and cons of online learning and ERT present a rational thought for educationists to entertain the students. Results of the study indicate that there is a need for more digital training for medical education. Moreover, an important finding of the study was that a significant difference was found regarding practical skills. In future research, it is recommended to investigate what measures can be taken to improve the practical skills in the regime of ERT.

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Biography of Authors

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	<p>Konovalova Tetiana 16.10.1972, candidate of medical sciences (2007), assistant of the department of dermatology and venereology of Bogomolets National Medical University (from 2008 to 2013), works as associate professor and chair of venereology of Bogomolets National Medical University since 2013. Konovalova T.S. graduated with honors from the medical faculty of the Bogomolets National Medical University in 2002, she is included in the "Golden Book of Respect" of graduates of NMU. In 2002-2003, she studied at an internship specializing in dermatovenerology, and in 2002-2005, she completed a clinical residency at the Department of Dermatology and Venereology. - In the clinical residency at the Department of Dermatology and Venereology of NMU. In 2006 she was enrolled as a full-time postgraduate student in this department. In 2007, Konovalova T.S. completed and successfully defended her Ph.D. thesis ahead of schedule. 'In 2008, Konovalova T.S. was elected to the position of assistant chair of dermatology and venereology of NMU named after A.A. Bogomolets, and since March 2013 to the position of associate professor of the same chair. In 2013 she was awarded the academic title of "Associate Professor". The total pedagogical experience is 10 years. Konovalova T.S. conducts practical classes and lectures with students of medical and dental faculties according to the working programs of the discipline "Dermatovenerology". She systematically updates and supplements new material in lectures and methodological developments for practical classes with students. She is co-author of the monography "Trichomoniasis, candidiasis, genital herpes" (2008), and also co-author of the National textbook for students of medical higher educational institutions "Dermatology, venereology" published in Ukrainian, Russian, and English (2012) and co-author and doctor-interns of different specialties "Skin symptoms of internal diseases" (2012). She has 20 years of medical experience. Conducts consultative work with specialized patients on the clinical bases of the Department of Dermatology and Venereology. She has the highest qualification category in the specialty "Dermatology and venereology". She is the author of 68 scientific and educational works (6 abroad). Over the past 5 years, she has published 16 scientific papers in professional journals. Gorshaya Index (Google Scholar) - 11, Gorshaya Index (Scopus) - 1. English proficiency - B-2 (Aptis British Council).</p>

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