

UDC 378.147.018.43-057.875:616-053.2:001.895
DOI: 10.24061/2413-4260. XIV.2.52.2024.4

INNOVATIVE METHODS IN TEACHING
PEDIATRICS TO STUDENTS OF HIGHER
MEDICAL EDUCATION IN V AND VI YEARS:
DIALOGUE TEACHING

L. Vakulenko, L. Badogina,
O. Obolonska, A. Riznyk,
S. Samsonenko

Dnipro State Medical University (Dnipro, Ukraine)

Summary

The article substantiates the need to find and implement the latest learning technologies for students of higher medical education in the context of modern circumstances in Ukraine, which have caused the situation that a certain part of teaching is conducted remotely. This reduces the possibility for students to acquire the competencies defined by the discipline program. The principles of teaching with the use of dialogue technology were analyzed according to the literature. The positive effects of dialogic training on the development of communicative skills, the ability to express one's thoughts and ideas, and to listen to others have been identified. Meaningful dialogue contributes to a deeper understanding of the educational material and can be used as a basis for solving problem situations, working in groups, using the case method, in project technology. In addition, a dialogic approach to learning is an opportunity to support the development of critical thinking. Certain problems in the introduction of dialogic technology in higher medical education are also pointed out: the presence of diagnostic and treatment protocols in medicine somewhat limits discussions in the educational process. The implementation of the principles of dialogical learning in pediatrics teaching at the final stages of higher medical education and in students' research work is demonstrated. Conclusions. The search for alternative methods of education in higher medical education institutions is an urgent problem today. The dialogical method of learning, as a progressive method, should be included in the teaching process, as a method that promotes self-criticism, the development of students' communicative skills, and has a positive influence on cognitive activity. Effective dialog among students and between students and teachers is possible in any variant of the educational process: in the classroom, at a distance and in a mixed format. The successful implementation of the dialogical teaching method in clinical teaching requires its thorough methodical development. Scientific activity of students can be considered as one of the options of dialogical education.

Key words: Innovative Educational Methods; Higher Medical Education; Dialogical Learning.

Introduction

High-quality education of highly qualified, competitive specialists in the field of health care, ready to perform professional duties – the main goal of the higher medical educational institution. The realities of the last three academic years (the COVID-19 pandemic, military actions on the territory of Ukraine) have led to the situation that a significant part of the teaching is conducted remotely.

This type of study has certain positive qualities and even, from some points of view, advantages over the traditional one, since it is more flexible, more individualized, allowing the student to choose a time that is convenient for him and to be in a comfortable and safe place during the lesson. The last point is probably the most important today. However, the education of specialists in higher medical education institutions cannot be carried out completely at a distance. This is especially true for the teaching of clinical disciplines. The limitation, and in some cases the lack of contact between students and patients, reduces the opportunity for students to acquire the competencies defined by the discipline program. Even the most advanced computer simulators cannot replace «live» practice for future physicians. In addition, in distance learning, the personal contact of students with each other and with teachers is minimal, if not absent. Therefore, this form of training with a traditional approach does not ensure the development of communication skills, self-confidence, teamwork skills. There is also no doubt that there is a need to increase the motivation in the education of students of

the last courses of medical university during the period of long-term online education. All this determines the necessity to find and implement new, alternative methods of education.

The principle of dialogue in the system of alternative approaches to education. In the early 90s of the 20th century, I. C. Mc Manus noticed that students were critical of traditional medical education and asked the question: «What will medical education be like in 2021?» and believed that medical education will be professionalized [1]. Currently, this principle is reflected in the obligatory condition of modern medical education – acquisition of general and professional competencies by the student.

Modern pedagogy uses a wide range of different innovative teaching methods, which contribute to better assimilation of knowledge by students, development of their intellectual activity, formation of abilities and skills of critical understanding of the problem, ability to analyze the received information, formation of both general and professional competencies. Modern innovative technologies are complex changes and improvement of educational process, enrichment of traditional methods. Today, the pedagogical arsenal of higher medical education includes various learning technologies that are well tested and used in different countries to achieve specific goals of the educational program. In particular, it is a problematic technology, the essence of which is that the teacher creates a system of problematic clinical situations and manages the process of their solution by students [2], including

the method of «brainstorming», which is focused on the collective search for a solution to the problem; games (role-playing, business, plot, simulation games that allow to simulate various clinical situations) [3]; technologies of collective and group activity: Team learning has a great advantage in that learners find and make decisions as a team, which contributes to increased motivation for learning, creates conceptual reflection and contributes to deeper acquisition of knowledge [4], case method (solution of a specific clinical situation by students) [5], project technology, the feature of which is independent search for necessary information, its creative transformation to solve the given task [6].

One of the modern educational innovations is the principle of dialogic learning. Dialogic learning is a transformative approach to education in which the exchange of ideas and perspectives is continuous and rich in opportunity. Dialogic learning emphasizes the importance of dialogue and conversation as essential components.

The term was first introduced by Robin Alexander in the early 2000s [7]. The issues surrounding the implementation of dialogic teaching have been addressed in his subsequent publications [8, 9, 10]. Dialogic learning has been tried and tested by the Education Endowment Foundation, an independent charity whose aim is to improve teaching and learning in British education. The dialogic approach is based on the principles of dialogue and promotes the active exchange of information, thoughts, views and experiences between participants in communication. This approach promotes mutual understanding, cooperation, problem solving and the achievement of common goals, which involves transforming the dominant position of the teacher and the subordinate position of the student into personal and equal positions of people working together. The role of the teacher as a carrier of information is reduced in favor of the role of a coordinator in holding a discussion, justifying the own position of the participants of the dialogue, exchanging opinions.

The key principles of dialogic conversation are: engaging students in collaborative learning where knowledge is created through dialogue and collaboration; encouraging the free exchange of ideas when students listen to each other, ask questions, and respond thoughtfully; creating a safe and inclusive environment that allows students to express their thoughts and opinions without fear of criticism based on prior knowledge and understanding; and ensuring purposeful and meaningful classroom discussion with clear learning objectives.[11] Students participating in dialogic learning have the opportunity to express their thoughts and ideas as well as listen to others. They learn to argue and justify their views, which helps develop their communication skills. In addition, dialogic learning can help students develop empathy and the ability to listen and understand others, which are key skills in today's world. A dialogical approach in cross-curricular learning can be extremely useful in creating a meaningful dialogue that contributes to a deep understanding of the educational material [12].

It is obvious that all modern models and methods of teaching should be focused on the dialogical nature of student education, which includes the development

of systems of feedback between students and teachers, increasing the level of understanding between them. Dialogue can be the basis for solving problem situations, working in groups, using the case method, in project technology. In addition, a dialogical approach to learning is an opportunity to support the development of critical thinking, which is a key learning goal in higher education, and a dialogical approach to learning can optimize opportunities for students to engage in debate and articulate their opinions [13].

Socrates himself once suggested that educational practice be guided by the concept of dialog. His famous paradox «I know that I know nothing» reflects the presence and importance of reflection in the learning process – a method of introspection of knowledge and actions, their meanings and limits. Scientific reflection (from the Latin reflexio – «to turn back») is oriented toward criticism and awareness of theoretical knowledge; it also examines the ways and methods of cognition used in a particular field of research. Reflection also plays an important role in professional development. By analyzing our work and accomplishments, we can identify our strengths and weaknesses and focus our efforts on improvement. This process provides an opportunity to grow as a professional and reach greater heights in one's career. Thus, reflection, which is formed through dialog and discussion, is an important tool for personal and professional development. It helps the participants of the educational process to focus on themselves, to understand themselves better and to effectively influence their lives, which leads them to correct their activities, their interaction with others depending on the situation [14].

A large number of studies by pedagogues and psychologists are devoted to solving various problems related to the development of the idea of pedagogical interaction, which demonstrate the necessity of introducing dialogical learning technology into the practice of higher education [15, 16, 17, 18, 19, 20], including medical [21, 22, 23, 24]. Research by Mishra PP [21] showed that the introduction of the latest technologies, including group discussions, made it possible to improve the academic performance of 92 % of students. According to Ghiam, B. K., Loftus, S., & Kamel-ElSayed, S. [22], the dialogic approach to learning challenged students who were not used to public speaking and encouraged students to be well prepared. A Pilot Working Group (PWG) of staff from the Ontario Institute for Educational Research/University of Toronto and medical educators studied the preparation and implementation of dialogic teaching in clinical settings. The concepts and practice of dialogic learning received a positive response from the members of the PWG [24].

Own experience. At the Department of Propaedeutics of Children's Diseases and Pediatrics 2 of Dnipro State Medical University students of the specialty «Medicine» study in the 2nd, 3rd, 5th and 6th years. Teaching at the university is still in a mixed format (partly offline and online). In addition, some students, for various good reasons, are out of town or out of the country, so they study remotely. This is particularly relevant for foreign students. The situation that has developed, more than usual, dictates

the need to implement the latest learning technologies to ensure that students acquire the competencies defined by the educational program. In the teaching of pediatrics to 5th and 6th year students, among other technologies, a dialogical approach is implemented. There is a certain sequence of relations between the teacher and the learner – from the maximum help of the teacher to the students in the first years of study in solving educational tasks to the gradual growth of their own activity in learning and the emergence of equal relations between them in the following years of study.

We offer a dialogical form of processing both the main and additional educational materials, where the student has an opportunity to argue his clinical position, which gives an understanding of the presence of different views on the clinical situation. The educational process is organized in such a way that almost all students are involved in the communication process, where they can exchange thoughts and ideas in conditions of emotional comfort and creative atmosphere in the class. Consideration of clinical situations takes place in the form of dialog or discussion. Dialogue in education acts not only as a means of knowledge acquisition, but also as an indispensable educational technology, and is also one of the main tools for mastering the necessary level of communication skills, contributes to the improvement of the ability to express thoughts in speech. Conducting a discussion with the participation of all students during the analysis of a clinical case allows the development of individual cognitive abilities of each student.

However, conducting dialog and discussion in the discussion of the clinical situation has some limitations, since there are certain positions defined by diagnostic and treatment protocols. This determines the need for a thorough methodological study of teaching with the inclusion of the dialogical method. In the conclusions of the pilot working group that studied the dialogic principle in medical education, it was noted that the successful implementation of this approach requires experience, desire and support for teaching knowledge and skills that are not traditionally included in medical curricula [24].

The implementation of innovative learning technologies in the higher educational institution is also relevant in connection with the fact that innovations, in addition to the educational process, also cover the scientific-research and organizational-learning process of educational activity [25]. The development of the skills of dialogue, discussion, advocacy of one's own opinion takes place through participation in student scientific circles, especially during joint meetings of circles of departments of various

profiles. At Dnipro State Medical University joint meetings of student scientific groups of the Department of Pathological Anatomy, Forensic Medicine and Pathological Physiology and the Department of Pediatrics have already become a tradition. The views of the disease from the pathomorphological, pathophysiological and clinical point of view are presented. Meetings are held in a mixed format: speakers and discussants can either be present in the audience or present and discuss remotely.

An important role is also played by the participation of students with reports in the annual conferences of young scientists. The direction of the reports is chosen by the student, the teacher acts as a consultant. Presenting a report at a conference, answering questions, defending one's position is a significant contribution to the development of a student's communicative skills. The mixed format of the conferences allows students and young scientists from other countries to be its participants.

Thus, through dialogues and discussions, students develop a desire for cooperation, positive guidance in cognitive and research activities, and the ability to understand the requirements and advice of the teacher and supervisor. The teacher provides control and evaluation not only of the result, but above all of the learning process, the development of logic and confidence in teaching the material.

Conclusions

1. The search for alternative methods of education in medical schools is an urgent problem today.
2. The dialogical method of learning, as a progressive method, should be included in the teaching process, as a method that contributes to self-criticism, to the development of the students' communicative skills, and as a positive guide for cognitive activity.
3. Effective dialogue among students and between students and teachers is possible in any variant of the educational process: in the classroom, at a distance and in a mixed format.
4. Successful implementation of dialogical teaching method in clinical teaching requires its thorough methodical development.
5. Students' scientific activity can be considered as one of the options of dialogical learning.

Sources of funding. The article was published without any financial support.

Conflict of interest. The authors declare no conflict of interest

References:

1. Mc Manus IC. How will medical education change? *Lancet*. 1991;337(8756):1519-21. doi: 10.1016/0140-6736(91)93205-N
2. Chang BJ. Problem-based learning in medical school: A student's perspective. *Ann Med Surg*. 2016;12:88-9. doi: 10.1016/j.amsu.2016.11.011
3. Adiyono S, Novianto S. Game Method Based on Genre Game as Higher Educational Learning: Systematic Literature Review with VOSviewer. *Suan Sunandha Science and Technology Journal*. 2023;10(1):23-33. doi: 10.53848/ssstj.v10i1.411
4. Burgess A, Bleasel J, Haq I, Roberts C, Garsia R, Robertson T, et al. Team-based learning (TBL) in the medical curriculum: better than PBL? *BMC Med Educ*. 2017;17(1):243. doi: 10.1186/s12909-017-1068-z
5. Korniihuk OY, Bambyzov LM, Kosenko V M, Spaska AM, Tsekhmister YV. Application of the Case Study Method in Medical Education. *International Journal of Learning, Teaching and Educational Research*[Internet]. 2021[cited 2024 Feb 22];20(7):175-91. Available from: <http://dspace.zsmu.edu.ua/bitstream/123456789/14591/1/3927-15388-1-PB.pdf>

6. Liao SC, Lee MR, Chen YL, Chen HS. Application of project-based service-learning courses in medical education: trials of curriculum designs during the pandemic. *BMC Med Educ.* 2023;23(1):696. doi: 10.1186/s12909-023-04671-w
7. Alexander RJ. *Towards Dialogic Teaching. Rethinking Classroom Talk.* 4 st ed. York: Dialogos; 2008. 60p.
8. Alexander RJ, editor. *The CPRT/IEE Dialogic Teaching Project, Trial stage 2015-16: Handbook for schools.* York: University of York [Internet]. 2015[cited 2024 Mar 5]. Available from: https://robinaalexander.org.uk/wp-content/uploads/2019/12/AERA-Alexander_P3-final-proof.pdf
9. Alexander RJ, Hardman F, Hardman J, Rajab T, Longmore M. *Changing Talk, Changing Thinking: interim report from the in-house evaluation of the CPRT/UoY Dialogic Teaching Project.* [Internet]. 2017[cited 2024 Mar 2]. Available from: https://www.researchgate.net/publication/335969903_Changing_Talk_Changing_Thinking_Interim_report_from_the_in-house_evaluation_of_the_CPRTUoY_Dialogic_Teaching_project
10. Alexander RJ. *Developing dialogue: genesis, process, trial.* *Research Papers in Education* 2018;33(5):561-98. doi: 10.1080/2671522.2018.1481140
11. Main P. *Dialogic Teaching: A classroom guide for better thinking and talking* [Internet]. 2021[cited 2024 Mar 2]. Available from: <https://www.structural-learning.com/post/how-to-use-dialogic-pedagogy-the-key-to-powerful-teaching>
12. Ionescu A. *Creating meaning in interdisciplinary dialogues within Global Health: reflections from postgraduate teaching.* *Postgraduate Pedagogies.* 2023;3(1):242-60.
13. Heron M, Wason H. *Developing dialogic stance through professional development workshops.* *Innovations in Education and Teaching International*[Internet]. 2023[cited 2024 Mar 2]. Available from: <https://www.tandfonline.com/doi/epdf/10.1080/14703297.2023.2271892?needAccess=true>
14. Kovalchuk Z. *Osobistisna refleksija v umovah postitinih zmin* [Personal reflection in constant conditions social change]. *Social and legal studies.* 2021;4(14):177-83. doi: 10.32518/2617-4162-2021-4-177-183 (in Ukraine)
15. Tamarkina OL. *Dialogovi tehnologii navchanna* [Dialogue learning technologies][Internet]. 2016[cited 2024 Feb 20]. Available from: <http://eprints.zu.edu.ua/23142/1/9.pdf> (in Ukraine)
16. Bibler V. *Kultura. Dialog culture* [Culture. Dialogue of cultures]. Kyiv: Duh i Litera; 2018. 368p. (in Ukraine)
17. Stativka V. *Dialogove navchanna yak innovacina pedagogichna tehnologia* [Dialogic teaching as an innovative pedagogical technology]. *Zbirnyk naukovykh prats'. Actual problems of psychology in educational institutions.* 2018;8:166-73. doi: 10.31812/psychology.v0i0.7233 (in Ukraine)
18. Chung E, Fisher L. *A dialogic approach to promoting professional development: Understanding change in Hong Kong language teachers' beliefs and practices regarding vocabulary teaching and learning.* *System* [Internet]. 2022[cited 2024 Jan 6];110:102901. Available from: www.elsevier.com/locate/system doi: 10.1016/j.system.2022.102901
19. Moate J, Vass E. *Exploring dialogical spaces of discovery.* *Dialogic Pedagogy: A Journal for Studies of Dialogic Education.* 2023;11(1):39-59. doi: 10.5195/dpj.2023.504
20. Solodchuk A. *Dialohichne navchannia yak zasib formuvannia komunikativnykh zdbnostoni zdobuvachiv osvity u profilniishkoli* [Dialogical learning as a means of developing students' communicative skills in a specialized school]. *International Science Journal of Education and Linguistics.* 2023;2(4):19-31. doi: 10.46299/j.isjel.20230204.03 (in Ukraine)
21. Mishra PP, Mishra A, Prasad H, Kumar I, Bhushan S. *A study of medical education technology (MET) guidelines implementation in poorly performing first year medical students.* *Biomedicine.* 2021;41(2):502-4. doi: 10.51248/v41i2.1067
22. Ghiam BK, Loftus S, Kamel-ElSayed S. *Dialogical narrative approach to enhance critical thinking and student engagement during lecturebased classes. Focus on Health Professional Education. A Multi-Professional Journal.* 2019;20(3):30-43. doi: 10.11157/fohpe.v20i3.344
23. Grecu NC. *Engaging pre-med students in field-related dialogue: best practices for a dialogic approach to a health-specific oral communication course.* *Journal of Communication Pedagogy.* 2022;6:255-62. doi: 10.31446/JCP.2022.1.19
24. Kuper A, Boyd VA, Veinot P, Abdelhalim T, Bell MJ, Feilchenfeld Z, et al. *Dialogic Approach to Teaching Person-Centered Care in Graduate Medical Education.* *J Grad Med Educ.* 2019;11(4):460-7. doi: 10.4300/JGME-D-19-00085.1
25. Haidabrus B. *Information technology and management in higher education and science.* *FED.* 2022;2(4):29-41. doi: 10.57125/FED.2022.25.12.03

ІНОВАЦІЙНІ МЕТОДИ У ВИКЛАДАННІ ПЕДІАТРІЇ ЗДОБУВАЧАМ ВИЩОЇ МЕДИЧНОЇ ОСВІТИ НА V ТА VI КУРСАХ: ДІАЛОГОВЕ НАВЧАННЯ

Л. І. Вакуленко, Л. П. Бадогіна, О. Ю. Оболонська, А. В. Різник, С. В. Самсоненко

Дніпровський державний медичний університет
(м. Дніпро, Україна)

Резюме.

В статті обґрунтовується необхідність пошуку та впровадження новітніх технологій навчання для здобувачів вищої медичної освіти у розрізі сучасних обставин в Україні, що призвели до ситуації, коли значна частина занять проводиться дистанційно. Це зменшує можливість набуття здобувачами освіти компетентностей, визначених програмою дисципліни. За даними літератури проаналізовані принципи проведення занять за діалоговою технологією. Визначені позитивні впливи діалогового навчання на розвиток комунікативних компетенцій. Визначений позитивний вплив навчання діалогу на розвиток комунікативних компетенцій, уміння висловлювати свої думки та ідеї, слухати інших. Змістовний діалог сприяє глибокому розумінню навчального матеріалу, і може бути покладений в основу розв'язання проблемних ситуацій, роботи в групах, використання кейс-методу, в проєктній технології. Крім того, діалогічний підхід до навчання – можливість для підтримки розвитку критичного мислення. Вказується також на певні проблеми у впровадженні діалогової технології у вищій медичній освіті: наявність в медицині протоколів діагностики та лікування дещо обмежує проведення дискусій у навчальному процесі. Демонструється впровадження принципів діалогового навчання при проведенні занять з педіатрії на останніх курсах навчання здобувачів вищої медичної освіти та в науково-дослідницькій роботі студентів. Висновки. Пошук альтернативних методів навчання в закладах вищої

медичної освіти – актуальна проблема сьогодення. Діалоговий метод навчання, як прогресивний має бути залучений при проведенні занять, як такий, що сприяє самокритиці, розвитку комунікативних компетенцій студента, формує позитивну настанову на пізнавальну діяльність. Проведення ефективного діалогу між студентами та між студентами та викладачем можливе при будь-якому варіанті навчального процесу: в аудиторії, дистанційно та в змішаному форматі. Успішне впровадження діалогового методу навчання при проведенні клінічних занять потребує їх ретельного методичного опрацювання. Наукова діяльність студентів може розглядатись як один з варіантів діалогового навчання.

Ключові слова: інноваційні методи освіти, вища медична освіта, діалогове навчання.

Contact Information:

L. Vakulenko – doctor of medicine, professor, head of the department of propaedeutics of children's diseases and pediatrics 2 of the Dnipro State Medical University (Dnipro, Ukraine)
e-mail: vakulenkol@ukr.net
ORCID: <https://orcid.org/0000-0003-3823-6134>

L. Badogina – Doctor of Medicine, Associate Professor of the Department of Propedeutics of Children's Diseases and Pediatrics 2 of the Dnipro State Medical University (Dnipro, Ukraine)
e-mail: lyudmila.badogina@gmail.com
ORCID: <https://orcid.org/0000-0002-2971-9815>

O. Obolonska – doctor of philosophy, assistant of the department of propaedeutics of children's diseases and pediatrics 2 of the Dnipro State Medical University (Dnipro, Ukraine)
e-mail: o_obolonskaja@ukr.net

A. Riznyk – Doctor of Medicine, Assistant Professor of the Department of Propedeutics of Children's Diseases and Pediatrics 2 of the Dnipro State Medical University (Dnipro, Ukraine)
e-mail: aliona.rezz@gmail.com
ORCID: <https://orcid.org/0000-0003-0594-6842>

S. Samsonenko – doctor of philosophy, assistant professor of the department of propaedeutics of children's diseases and pediatrics 2 of the Dnipro State Medical University (Dnipro, Ukraine)
e-mail: ssindorella2@gmail.com
ORCID: <https://orcid.org/0000-0001-6812-0939>

Контактна інформація:

Вакулєнко Л. І. – д.мед.н., професор, завідувачка кафедри пропедевтики дитячих хвороб та педіатрії 2 Дніпровського державного медичного університету (м. Дніпро, Україна)
e-mail: vakulenkol@ukr.net
ORCID: <https://orcid.org/0000-0003-3823-6134>

Бадогіна Л. П. – к.мед.н., доцент кафедри пропедевтики дитячих хвороб та педіатрії 2 Дніпровського державного медичного університету (м. Дніпро, Україна)
e-mail: lyudmila.badogina@gmail.com; тел +38 (050) 3612116
ORCID: <https://orcid.org/0000-0002-2971-9815>

Оболонська О. Ю. – доктор філософії, асистент кафедри пропедевтики дитячих хвороб та педіатрії 2 Дніпровського державного медичного університету (м. Дніпро, Україна)
e-mail: o_obolonskaja@ukr.net

Різник А. В. – к.мед.н., асистент кафедри пропедевтики дитячих хвороб та педіатрії 2 Дніпровського державного медичного університету (м. Дніпро, Україна)
e-mail: aliona.rezz@gmail.com
ORCID: <https://orcid.org/0000-0003-0594-6842>

Самсоненко С. В. – доктор філософії, асистент кафедри пропедевтики дитячих хвороб та педіатрії 2 Дніпровського державного медичного університету (м. Дніпро, Україна)
e-mail: ssindorella2@gmail.com
ORCID: <https://orcid.org/0000-0001-6812-0939>



Received for editorial office on 11/03/2024
 Signed for printing on 10/05/2024