MODERN EDUCATIONAL METHODS FOR IMPROVING THE QUALITY OF PRACTICAL TRAINING IN HIGHER MEDICAL SCHOOL

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Abstract

The use of modern interactive teaching methods in higher medical school leads to the creation of competitive medical specialists possessing the necessary professional competence to provide quality healthcare. The article presents the most commonly used methods for teaching and practical classes in pediatric healthcare. The opinion of nursing students on the importance of interactive teaching methods for acquiring knowledge, skills, attitudes and behavior for working with children was studied.

Keywords: *training, nurses, practical exercises, interactive methods*

1. INTRODUCTION

The main goal of university nursing education is to prepare highly qualified health professionals, capable of applying and developing scientific and medical knowledge and skills in medical practice and healthcare. The training of students is carried out according to the requirements for the educational and qualification degree "bachelor" and in accordance with the educational mission, goals and objectives of the higher educational institution. Professional and general competencies are defined as areas of knowledge, skills and behaviors and correspond to the received training and qualification.

Training of nurses includes the acquisition of specific knowledge, skills and competencies for patient health care. According to the Regulation on the uniform state requirements for acquiring higher education in the specialties "nurse" and "midwifery", the training includes theoretical and clinical training. Theoretical training is carried out through mandatory, elective and facultative academic subjects in the form of lectures, seminars, practical exercises and independent work, and clinical training is carried out through clinical practice and pre-graduate internship under the supervision of persons with higher education in the specialty "Nursing"(28).

The effectiveness of the knowledge and skills and the level of professional competence that students acquire during their professional education is closely related to the approach to training in higher medical school. It is necessary to build a creative personality by forming a critical thinking style. In order to be able to work independently and exercise her autonomous role, the nurse must possess thinking qualities such as depth, criticality, flexibility. This is especially pronounced in the work of the nurse with children. The acquisition of these qualities and personal professional skills is impossible without introducing modern educational methods in practical training in pediatric healthcare. Therefore, combining traditional training approaches with interactive forms of conducting classes in the training of nurses to work with children is not only relevant, but also a necessary condition for the formation and development of practical skills of students. Practical exercise is carried out in small groups and is defined as the most effective form for mastering and consolidating practical skills and habits and applying theoretical knowledge. It is conducted in classrooms, and each classroom must have the necessary equipment to perform practical tasks. Trainees work independently (when solving written tasks, defining specific learning objectives, developing a training program for children and adults - healthy and sick, etc.) or in small groups (role-playing games). Interactive methods are different depending on the goals for which they are applied. During practical exercises, traditional methods are combined with interactive ones. The most commonly used interactive methods and techniques in the training of nurses are:

- Demonstration;
- Instruction;
- Independent work - classroom and extracurricular;

- Observation;
- Exercise;
- Performing practical tasks;
- Working with a book, textbook or other supporting literature and in a library;
- Working in small groups;
- Role-playing games;
- Written test;
- Solving tasks, problems, cases;
- Situational method;
- Developing a term paper;
- Working on the Internet.

Interactive teaching methods stimulate the process of learning the material, increasing students' interest in acquiring knowledge and skills. This requires continuous improvement of the teaching methods used in the preparation of students in the specialty "nursing" for working with children.

The purpose of this study is to study the students' opinion on the interactive teaching methods applied during practical exercises in pediatric healthcare, analyzing their importance for acquiring knowledge and professional skills for working with children.

2. MATERIALS AND METHODS

Material and methods: The study was carried out through a direct anonymous individual survey, through which data were collected on the opinions of 204 second, third- and fourth-year students, majoring in "nursing", studying at the "Prof. Dr. Ivan Mitev" Branch, Vratsa, Medical University - Sofia. The study was conducted in the period April - May 2025. The data were processed using the statistical computer program SPSS v. 20. The results are described through graphs and numerical values (relative share, arithmetic mean with standard deviation, correlation coefficients, etc.). The significance of the results was determined at $p<0.05$.

3. RESULTS

In medical education, methods that increase the cognitive activity of students are of particular importance. Nurses are prepared to carry out professional activities in all structures of the healthcare system, including pediatric care. Working with children is specific, which requires improving the technologies and methods of training for working with this group of patients. One of the requirements for organizing the educational process in mastering practical skills for working with children and forming professional competencies is the use of interactive methods when conducting classes. In interactive training, the educational process is organized in such a way that almost all students are included in the learning process. To build professional competencies for working with children and to solve educational problems in the practical training of students, various interactive forms can be used, such as a round table (discussion, debate), brainstorming, role-playing games, case studies (analysis of specific situations, situational analysis), master classes, training sessions, etc. This prompted us to investigate the students' opinions on the use of interactive methods during practical exercises in pediatric healthcare. A significant proportion of students (84.3%) reported that in practical exercises, teachers apply interactive methods to acquire skills and habits for working with children, of which 55.9% answered "yes, always", and 28.4% reported that they are applied, but sometimes. 7.4% gave a negative answer, and 8.3% could not assess (Fig. 1).

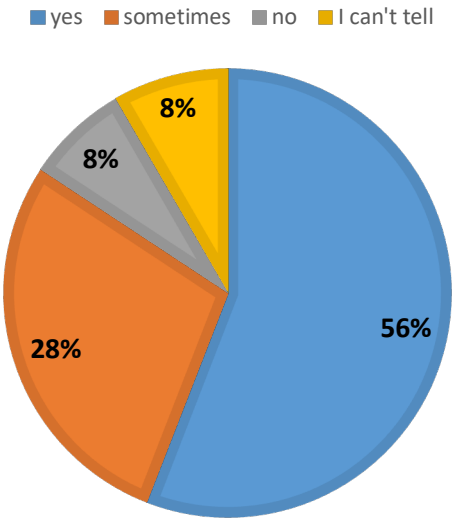

Fig. 1. Students' opinion on the use of interactive teaching methods during practical exercises for working with children

Interactive learning is an organization of cognitive and communicative activities in which all participants in the educational process interact with each other, exchange information, jointly solve problems, model situations, evaluate work and immerse themselves in a real atmosphere of business cooperation to solve problems. Interactive forms of learning are: analysis of specific situations (case studies), game forms, project implementation, training, discussion, etc. According to the students' opinion, the most frequently used learning methods during practical exercises in pediatric healthcare are: case study (80.8%), discussion (61.3%), role-playing games (30.9%), simulation (29.4%), method of specific situations (20.1%), brainstorming (14.7%), other methods (7.35%). The sum of the percentages exceeds 100, but students indicate more answers (Fig. 2).

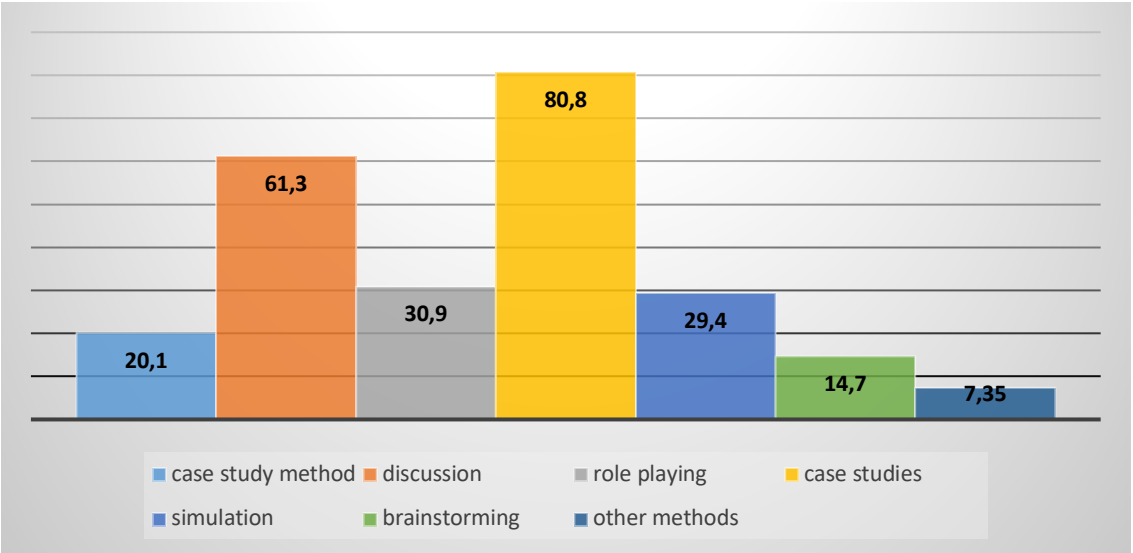

Fig. 2. Interactive teaching methods used during practical exercises for working with children, according to the students' opinion

Interactive methods contribute to better acquisition of practical knowledge and skills, so we decided to find out which is the most appropriate method for them to acquire the necessary skills and habits for working with children. Data analysis shows that a significant proportion of students (90.7%) believe that the most appropriate methods for acquiring practical knowledge and skills for working with children are role-playing and simulation (79.4%). In third place in importance, students place the method of specific situations (51.5%), followed by a case study (31.9%) and discussion (29.4%). The least preferred method by students is brainstorming – 12.3%, and 9.8% prefer other methods. The results obtained are presented in Fig. 3:

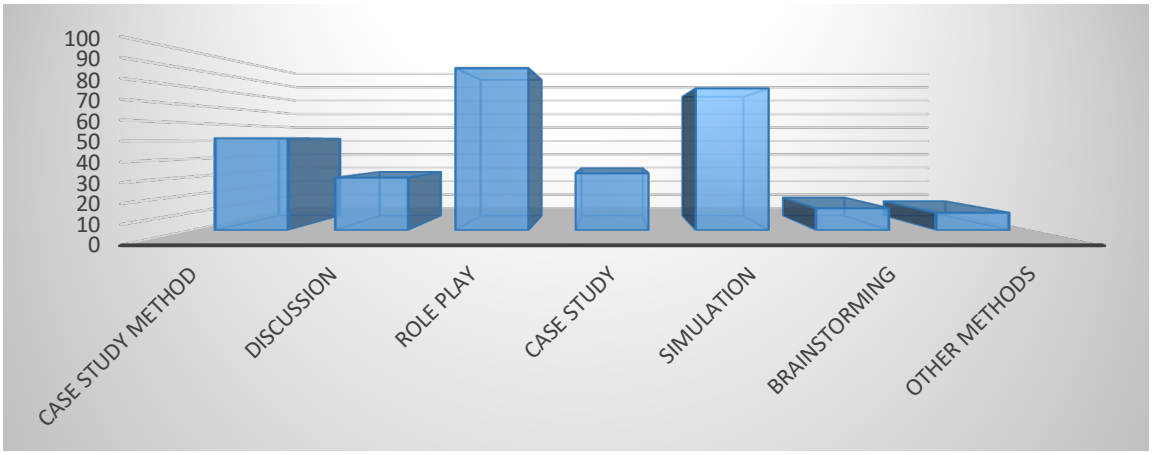

Fig. 3. Students' opinion on their preferred methods in practical exercises in pediatric healthcare

In the course of interactive training, students acquire skills to think critically, to solve complex problems based on an analysis of circumstances and relevant information, to respect alternative opinions, to make thoughtful decisions, to participate in discussions, to communicate with other people. When comparing the most frequently used methods by teachers during practical exercises for working with children and those preferred by students, a statistical dependence was established - $p<0.05$, as can be seen from Fig.4

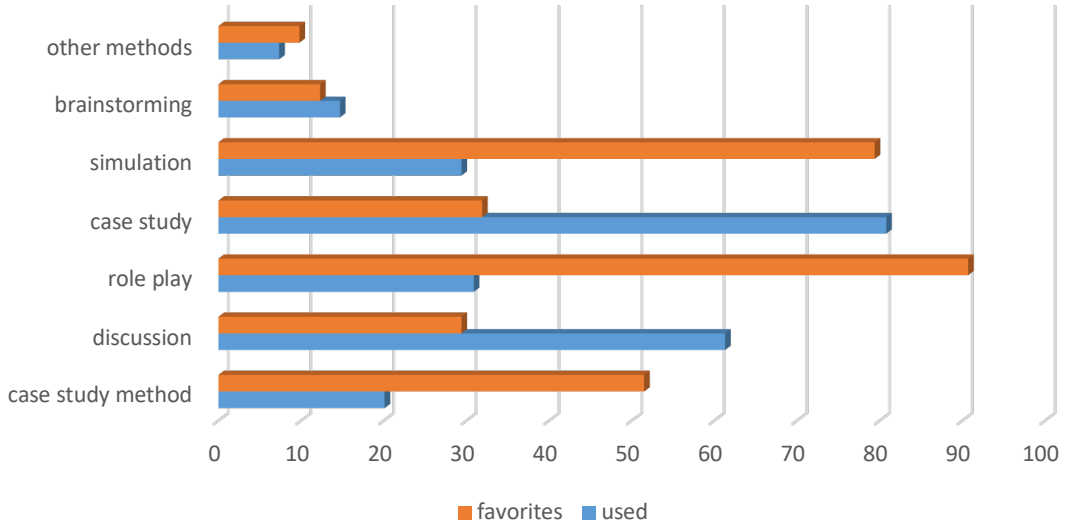

Fig. 4. Relationship between the interactive teaching methods used by teachers in practical exercises for working with children and those preferred by students

It is evident that for students the most preferred and most significant interactive methods in practical exercises for acquiring knowledge, habits and skills for working with children are role-playing (90.7%) and simulation (79.4%), while teachers most often use case studies (80.8%) and discussion (61.3%).

Although there is a discrepancy in the interactive methods used and preferred by students, almost all students 96.1% believe that their use is absolutely necessary during practical exercises in pediatric healthcare, 2.9% prefer traditional teaching methods and answer that they are necessary, but partly, 1% of respondents cannot judge, and there are no students who believe that they are not necessary (Fig. 5).

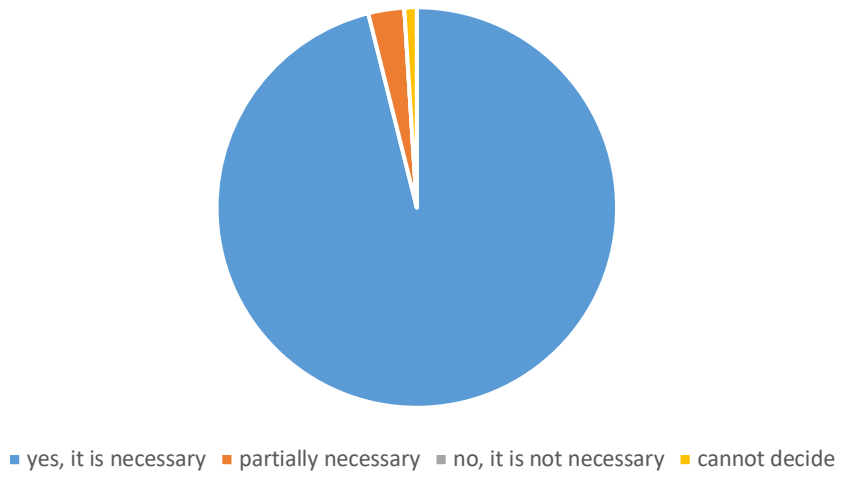

Fig. 5. Need for using interactive methods during practical exercises in pediatric healthcare, according to students' opinions

This shows that students appreciate the importance of interactive methods of pediatric healthcare education in acquiring knowledge, skills, and habits for working with children.

4. DISCUSSION

Data analysis shows that according to students, the most frequently used method during practical exercises in pediatric healthcare is the case study. Solving a particular case study is related to the presence of some problem or conflict in which the student must make a decision. When working with case studies, the role of students is extremely active, as they must analyze the situation, define the problem and outline the path to solving it.

According to 61.3% of students, the second preferred method used during practical exercises is discussion. According to Kostova (1999), Discussion is a method of learning through resolving controversial issues, clarifying contradictions, building a thesis and antithesis. Summarizing and systematizing the results. During the discussion, there is an exchange of information, clarification of alternatives, their evaluation and clear and precise delineation of the boundaries of the discussion. It requires a general understanding of the meaning of the basic concepts used on the topic. “Discussion is learning through communication, which is built on asking questions and expressing opinions. Each participant is a source of information. For this reason, mutual listening is one of the basic rules.” (20).

In practical classes, it is advisable to use methods for solving situational problems in the form of a role-playing game. This is a modern technology for preparing students in the specialty “nursing”, which represents a connection between the educational process and a real situation of professional communication. The performance of roles directs the attention of students to new ideas and feelings, expectations and relationships. According to Gyurova (2006), role-playing games “are a great way for

students to express their own attitude to a given problem in a small group with a learning goal… the method is suitable for forming skills for adequate response in a certain situation" (11). Role-playing is used to form professional skills by placing students in an imaginary situation in which they must respond adequately. According to students, role-playing takes up about 1/3 (30.9%) of the methods used, which indicates that they are not often used in practical training.

Students put the use of simulations in fourth place - 29.4%. The action develops according to an imaginary (simulated) plot or reproduces a real situation, characterized by an increased degree of danger to health and life or the use of expensive technical means and equipment. The goal is to reproduce the characteristics of a possible situation that requires adequate behavior. Through them, knowledge is acquired, but the emphasis is on the formation of skills, character building and the acquisition of values. Through simulations, skills for teamwork, problem solving, imagination development, etc. are formed.

The method of specific situations (playing situations) allows students to use some aspects of real life in an educational environment. The solution to a real situation that provokes tension and conflict is played out. The use of this method was indicated by 20.1% of the surveyed students.

According to the students, the brainstorming method is used the least (14.7%), although it is one of the most popular methods for solving a problem by collecting a large number of ideas in a short time. Different individual opinions are presented and a solution acceptable to all is sought by comparing the different opinions.

Conclusions:

1. A significant proportion of students (84.3%) reported that in practical classes, teachers apply interactive methods for acquiring skills and habits for working with children, with the most frequently used methods being case studies (80.8%), discussion (61.3%).
2. For students, the most preferred and most significant interactive methods in practical classes for acquiring knowledge, habits and skills for working with children are role-playing (90.7%) and simulation (79.4%), while teachers most often use case studies (80.8%) and discussion (61.3%).
3. The use of interactive teaching methods during practical classes in pediatric healthcare is absolutely necessary for almost all students, with 96.1% saying it is absolutely necessary, and 2.9% saying it is necessary but partially, and there are no students who think it is not necessary.

5. CONCLUSIONS

Interactive methods contribute to better learning of the lecture material and, most importantly, form opinions, attitudes, behavioral skills and professional competencies. Their use in practical classes for working with children facilitates the acquisition of theoretical knowledge and professional skills, corresponding to modern European requirements for the training of nurses.

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REFERENCES

1. Atanasova, Z., Kr. Miteva. 2011. Role–playing games - prerequisite for implementation of communication skills and models of conduct for medical professionals. Science & Technologies. Volume I, Number 1, 229-233

2. Bacheva, M. 2022. The clinical simulations in medical education as a valuable learning experience. KNOWLEDGE - International Journal, Vol. 52 No. 4: The Teacher of The Future, 581–587.
3. Chernogorova, Y., Grancharov, D., Bliznakov, Z. 2019. Assessment of the effectiveness of medical simulators in the practical training of medical students: Preliminary results in MU-Varna, Scripta Scientifica Salutis Publicae, vol. 5, Medical University of Varna
4. Dobrilova P., G. Yankova. 2022. Video algorithms as a means of improving the practical skills of students in the professional field of "Health Care". Nursing, Vol. 54, No. 2, 3-8
5. Dobrilova, P. P., G.T. Yankova. 2021. Analysis of the need to introduce video didactic materials in health care training. Journal of International Scientific Publications. Educational Alternatives. Vol. 19, 2021, 108-114
6. Dobrilova, P., G. Chaneva, M. Dimitrova. 2015. Importance of interactive teaching methods for students of higher medical school, Russia, 2015.
7. Dzhiganska T., M. Lozanova. 2025. Inclusion of modern methods in practical training of students in the specialties of „nurse and midwife “. Proceedings of the eighth scientific conference "Traditions and Innovations in Health Care", 2025, MU – Sofia, Central Medical Library, 79-82
8. European Framework of Reference. Ministry of Education and Science, Sofia, 2007. https://education.ec.europa.eu/bg/focus-topics/improving-quality/key-competences
9. Georgieva-Tsaneva G., I. Serbezova, S. Beloeva. 2025. Application of Virtual Reality, Artificial Intelligence, and Other Innovative Technologies in Healthcare Education (Nursing and Midwifery Specialties): Challenges and Strategies. *Educ. Sci.* 2025, *15*(1), 11
10. Glazunova T. Nikolaevna. 2016. Application of interactive teaching methods in studying professional modules in a medical college. All-Russian journal "Pedagogical experience". https://www.pedopyt.ru
11. Gyurova (2006). Interactivity in the educational process. Sofia, p. 63
12. Gyurova, V. 1998. Andragogy. The Art of Educating Adults. Sofia: Universal Drumev
13. Hristova, T., Georgieva, D. 2021. Video films in nursing and midwifery teaching—Statistical study of dependence. *TEM Journal*, *10*(4), 1520–1524.
14. Ilieva, K., Zanev, A., Dzhemal, S., Mladenov, N., Lichev, D., Ivanova, P., Platikanov, V. 2019. Innovations in medical education. Simulation medicine KASIM, MU "Prof. Dr. P. Stoyanov", Varna, University Hospital "St. Marina" - Varna
15. Ivanov I. 2012. Pedagogical interactivity. Collection of reports "Innovations and interactive technologies in education", Shumen, 91-99
16. Ivanov I. 2005. Interactive learning methods. – V: Sb. „50 godini DIPKU”. Varna
17. Ivanova, N., Interactivity in learning – interactive methods and techniques, 2014
18. Kapranova, E. A. 2012. Interactive learning: conceptual approaches. Journal Polotsk Gos. Univ. – Polotsk, 2012. No. 7. p. 11–14.
19. Kilova K., T. Dimcheva , D. Kilova. 2023. Modern aspects of virtual reality in nurse education. Nursing work; 55, No. 3,52-57
20. Kostova, Z., How to Learn Successfully – Innovations in Education, 1999, Sofia, Pedagog Publishing House, p. 115
21. Kostova, Z., E. Vladimirova. 2011. Interactive learning: essence, difficulties, theoretical foundations and critical assessments. – Strategies of educational and scientific policy, 3, 203–238
22. Kuzu E. B., Ceylan B. 2010.Typographic properties of online learning enviro ments for adults. % Procedia Social and Beavioral Sciences 9, 879-883.

23. Mollova K. 2023. Influence of interactive technologies on the formation of professional competencies in students of the rehabilitation specialty. Dissertation for the award of the scientific and educational degree "doctor". MU – Varna,144
24. Ordinance No. 1/08.February.2011 on the professional activities that nurses, midwives, associated medical specialists and health assistants may perform on assignment or independently, State Gazette No. 15/18.02.2011
25. Petkov, P. 2018. Interaction in medical education, Gabrovo, 24**.**
26. Popova, L., V. Gyurova, R. Drakeva et al., 2007. Methodical guide for adult education, S.
27. Radev, P. 2010. Interactive Methods in Education, Collection "Interactive Methods in Contemporary Education", University Publishing House "Neofit Rilski", Blagoevgrad.
28. Regulation on the uniform state requirements for acquiring higher education in the specialties "nurse" and "midwife" for the educational and qualification degree "bachelor", State Gazette No. 95/01.09.2006
29. Serbezova I. 2011. Interactive technologies in the education of future medical specialists. Scientific papers of the University of Ruse, volume 50, series 8.1, 124-128
30. Serbezova I., Ts. Hristova. 2016.The case study method - an active learning method for midwives and nurses. Proceedings of University of Ruse, volume 55, book 8.3.,59-64
31. Tsvetanova, V., Boboshevski, S. 2020. Interactive methods in school - Opportunity for social and educational change. Knowledge, 42(2), 299-302.
32. Yankova, G., P. Dobrilova. 2022. Educational video algorithms – a new paradigm in teaching dressing techniques to health care students. Nursing, Vol. 54, No.1, 31-38
33. Yankova, G., P. Dobrilova. 2022**.** E-learning – a challenge for health care students during a pandemic. Proceedings of the fifth anniversary scientific conference with international participation: "Modern challenges in health care", Vratsa, MU – Sofia, Central Medical Library, 135-140
34. Yankova, G.T., P.P. Dobrilova. 2021. Role and place of video algorithms in the teaching of bandaging techniques. Journal of International Scientific Publications. Educational Alternatives. Vol. 19, 403–410
35. Zdravkova, B. 2013. Modern methods in the practical training of students - social pedagogues. First scientific seminar for doctoral students, postdoctoral students and young scientists of the University of Veliko Tarnovo "St. Cyril and Methodius". Veliko Tarnovo: Faber, pp. 536-544