

## REVIEW

By Prof. Elena Grozeva Zheleva, PhD

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Appointed as a member of the Scientific Jury by Order No. P-109-557 of 14.12.2023. of the Rector of Medical University "Prof. Dr. Paraskev Stoyanov" - Varna, and on the basis of Protocol No. 1/22.12.2023 to prepare a **review** on the procedure for acquiring the educational and scientific degree "Doctor" with candidate: Katya Genova Mollova at the Branch - Sliven of the University of Varna.

**Subject:** Awarding of the educational and scientific degree "Doctor" in the field of higher education 7. Health care and sports, professional direction 7.4. Public Health, Health Care Management.

On the topic: **"The impact of interactive technologies on the formation of professional competences in students of Rehabilitation therapist specialty"**.

Research supervisor: Associate Professor Silvia Filkova, PhD

All the necessary documents provided for in the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations to it and the Regulations for the Development of the Academic Staff of MU-Varna have been submitted.

Senior lecturer Katya Genova Mollova's thesis proposed for defense is the result of her long-term, purposeful work as a health care specialist, lecturer and researcher. In 1995, at the Semi-higher Medical Institute - Plovdiv, she completed her semi-higher education in the specialty "Rehabilitation therapist", received the professional qualification "Rehabilitation therapist". She completed his bachelor's degree in the specialty "Health Care" at the Faculty of Medicine of the Higher Medical Institute, Plovdiv, with the professional qualifications of "Health Care Manager" and "Lecturer at a Medical College". And in 2009 – Educational qualification degree "Master" at Medical University - Sofia, Faculty of Public Professions with specialty "Health Care Management" and professional qualification "Health Care Manager".

Since 1995 until 2010 she worked on an employment contract as a lecturer at the Medical College of Trakia University - Stara Zagora. In the period from 2010 until now Katya Mollova works at the Medical College of Trakia University Stara Zagora as a Senior Lecturer. Between 2017 and 2019 she served as a Deputy Director of the Medical College at Trakia University Stara Zagora.

Katya Mollova is an established lecturer with high professional competences in the field of rehabilitation, kinesiotherapy, therapeutic massage, health care, clinical practice, pre-graduate internship and eastern massage techniques in the specialty "Rehabilitation therapist".

Katya Genova Mollova's dissertation work is dedicated to a significant problem related to the practical training of the rehabilitation therapists specialty, as well as the formation of professional skills and competencies through the interactive technologies.

The work presents the established modern needs and requirements for the competence approach in the training of the rehabilitation therapist; the peculiarities of the educational process in the medical college; organizational forms and methods for practical training, traditional and alternative training; the interactive training methods and the control and evaluation of the acquired knowledge, skills and competences of the specialist - rehabilitation therapist. The created toolkit is suitable for the purposeful research conducted to present the knowledge in the field of practical training in a Medical College; the role of the lecturer in the process of formation of professional competence among the students of the "Rehabilitation therapist" specialty through interactive technologies.

The dissertation contains 144 pages, is illustrated with 28 figures, 26 tables and contains 5 appendices. The bibliographic list contains 175 literary sources, of which 111 are in Cyrillic and 64 are in Latin, of which 5 are from the Internet.

The work is structured according to the requirements and includes: **introduction**; first chapter "**Literary review**" with eight paragraphs; second chapter "**Purpose, tasks, methodology and organization of the study**" with six paragraphs; the third chapter "**Results of own research**" with two paragraphs; chapter four "**Interactive Model. Methodology for Conducting a Didactic Experiment**" with three paragraphs; **conclusion; outcomes; recommendations; contributions; bibliography and applications**. The content corresponds to the topic and reflects the results of the research done by **senior lecturer Katya Mollova**.

In the **Introduction**, the scientific and practical-applied significance of the researched problem is presented - **the impact of interactive technologies on the formation of professional competences in students of rehabilitation therapist specialty**. The improvement of the capabilities of modern rehabilitation science, which provides high-tech and integrated solutions that take into account not only the strictly personalized needs of patients, is analyzed. Health care uses the rehabilitation process in all aspects - promotion, prevention, therapy, recovery and resocialization of patients. Emphasis is placed on modern conditions in which the training of future rehabilitators aims to adapt to new technologies in the teaching and learning processes, which motivate them for independence in work and creative thinking.

In the **first chapter titled "Literature review"**, the PhD student presents the relevance of the researched problem; makes a **theoretical analysis of the concepts "Competency approach in learning" and "competence"**. Thoroughly analyzes the "**professional competencies of the rehabilitation therapist**". Stops attention on the problem directed at the general characteristic of the "Rehabilitation therapist" specialty. Examines the peculiarities of the educational process in the medical college. Emphasizes organizational forms and methods used for practical training in a Medical College. Examining traditional and alternative education, she determines their main characteristics.

Senior lecturer **Katya Mollova** provides information on interactive learning methods, control and assessment of acquired knowledge, skills and competences. Summarizes and draws conclusions from the literature review so that interactive methods provide future rehabilitators with an active role in learning by involving them in interactions, collaboration and problem solving. They have the potential to enhance the educational experience of students by engaging, motivating and supporting the development of various skills and competencies. These methods create an



educational environment where students can build their knowledge through active participation and application of skills and competencies in situations and environments close to real life.

Senior lecturer **Katya Mollova** examines the overall organization and implementation of the educational process in the medical college. She also looks at training in the "Rehabilitation therapist" specialty as a continuous process that prepares future rehabilitation therapists to deal with real professional practice. Analyzes their abilities acquired during training. Summarizes the requirements and the impact of training on the results of the implementation of quality rehabilitation activities when working with the patient.

Special attention is paid to the acquired knowledge and skills of the students, which are of decisive importance for their successful future realization in the profession. Presents the challenge "educational process" to the students of the "Rehabilitation therapist" specialty. Offers continuous updating of training through innovative technologies to form and develop abilities for effective application of knowledge and skills in a real professional environment.

The literary sources used show the awareness of the author on the researched problem.

The PhD student summarizes that traditional learning has long been the predominant model in educational systems, and today there is a rapidly growing interest in approaches that encourage students to play an active role in their own educational process by developing their logical, critical thinking and communication skills. Emphasizes that interactive learning, relying on its own, innovative methods and means, emphasizes activity and communication between students, the possibility for them to enter into complex relationships and mutual influences to construct their own knowledge and skills.

**Katya Mollova** considers the control and assessment of students as a guarantee of the quality of education. Not only the acquired knowledge and skills are subject to evaluation, but also the professional competencies necessary for the students' practice in the conditions of the practical training classes occupation. It defends its own position for the assistance and effectiveness of knowledge, awareness and the construction of a positive change in the educational process through the influence of interactive technologies for the formation of professional competences in the students of the rehabilitation therapist specialty in the medical college.

In the **Second chapter "Purpos, tasks, methodology and organization of the study"** the purpos, tasks and hypothesis /working hypotheses/ of the study are formulated. It presents the subject and object of the study and the scope of the study. The organization, stages of the research and applied methods, criteria and indicators are outlined. Research methods were used: documentary method, sociological method, quantitative method /survey method/ and statistical methods. **For the statistical presentation of the results, the following** were used: **Descriptive and evaluation methods** / descriptive statistics and frequency analysis for quantitative variables; and graphic images;/ Hypothesis testing methods / Chi-square for consistency, Chi-square test of independence and Chi-square for hypothesis testing; Correlation analysis to establish the relationship between the investigated quantitative and qualitative variables/.

Statistical analysis was performed using the IBM SPSS Statistics 26.0 statistical package.

The research toolkit shows that the PhD student uses **self-developed tools**. Four questionnaires with closed and open questions were developed to survey the opinion of students, lecturers, mentors and students after a didactic experiment. For the purposes of the experiment, the PhD student has developed and implemented an author's "**Practical training interactive model**",



which includes a combination of appropriately selected, tailored to the specifics of the academic disciplines, interactive methods and technical training tools - a clinical case study, a discussion in a "small group", brainstorming, role-switching simulation role-playing and multimedia presentation.

The study was conducted in the period January - June 2023, after approval by the Committee on Ethics of Scientific Research (CESR) at Varna Medical University with Decision No. 123/15.12.2022.

**The organization of the study includes:** preparatory stage and actual study. Informed consent for participation in the study was prepared and each study participant was provided with information describing the purpose of the study, benefits to the study participant, and confidentiality of information.

The presented information about the conceptual apparatus used contributes to a more complete and accurate clarification of the concepts: interactive technologies; professional competence; educational process in a medical college; practical training class; clinical practice and the overall concept of the dissertation work.

In the **Third chapter titled "Results of our own studies"** the research model is presented, the real state of the problem in practice is revealed, and the results obtained from the conducted research are provided. The results of the PhD student's own research and discussion stand out. The study included 308 respondents, divided into three groups - students from the "Rehabilitator" specialty in MK-Stara Zagora, MK-Varna and MK-Plovdiv; lecturers in the "Rehabilitation therapist" specialty in MK-Stara Zagora, MK-Varna and MK-Plovdiv; and mentors from 10 medical institutions in the Republic of Bulgaria.

An in-depth analysis of the views of the participants in the conducted research was made. It has been proven that competitiveness in education occupies an important place and acquires special importance in the modern educational environment for students from the professional field of "Health Care". The established organization for training in the Medical College is determined by the mandatory components: modern material base; qualified lecturers; modern methods of teaching and evaluation of the results of the students' work.

The PhD student proves that a good material and technical base is necessary for the conduct of quality training and the acquisition of professional competences, periodic renewal of the available equipment in the halls for educational and practical classes, adequate to the innovations in rehabilitation science and practice, and provision of the necessary for practical classes consumables and equipment, as well as the application of interactive technologies for the formation of professional competences among the students of the rehabilitation therapist specialty.

**Katya Mollova** found that the formation of professional competence among rehabilitation therapists is a long and complex process, which is realized not only during their three-year training, but continues to improve even after their professional realization. An important trend is that any recommendation for curricula and innovations in the training of rehabilitation therapists should move towards training based on the formation of professional competences through interactive technologies.

Summarizing the results of the conducted research, the doctoral student analyzes interactive learning. It provides students with the opportunity to actively participate in the learning process by engaging in various activities that promote interpersonal communication and



interaction and facilitate the practical application of their knowledge. The interactive educational process has a strong influence on the academic motivation of students, stimulating them to be more engaged and interested during their educational activities.

An in-depth analysis of the students' views on the application of the interactive methods was made, with the following being preferred: the role-playing games, the discussion and the multimedia presentation, as they contribute to their better preparation. And the lecturers applying interactive methods and tools in the practical training of rehabilitation therapists are: problem-based learning, role-playing games and multimedia presentation.

The PhD student proves the students' need for additional training on the problem under consideration.

Senior teacher **Katya Mollova** analyzes the data indicated by the conducted survey among lecturers and mentors. They are convinced that the interactive training implemented in the educational and practical classes affects the formation of their professional competences. According to the lecturers and mentors from the clinical bases, the mastery of professional competencies is necessary for the development of the rehabilitation therapist as a professional, and they indicate as the most important communication skills, teamwork, creativity and the development of clinical thinking.

The PhD student proves that the organization of the learning process in the Medical College through **the impact of interactive technologies on the formation of professional competences in students of Rehabilitation therapist specialty** improves the educational process and increases the academic motivation of the students. And the factors affecting the interactive learning process - periodic improvement of the material and technical base, with the aim of facilitating the interactive process, increasing the qualifications of the trainers, working in small groups, correct selection of methods and tools, all this leads to a better understanding of the learning material and its more complete assimilation and application in practice. The application of the competence approach is a key moment in rehabilitation training, because through the formation of professional competences, future rehabilitation therapists follow the modern trends in education, namely their development as competent professionals.

The statistical processing presented by senior lecturer **Katya Mollova** shows that the advantages of interactive learning are highly valued, because through it, more lasting knowledge and practical skills are built, and communication is improved. The comparative analysis shows the unanimous opinion on the issue of the advantage of interactive learning, which facilitates the application of theoretical knowledge in practice.

It is proven that the use of interactive methods leads to the formation of professionally significant competencies such as: *communication skills, teamwork, creativity, independent decision-making*.

The PhD student summarizes the opinion of the respondents that the leading factors in the implementation of an interactive learning process are the material and technical base, the qualifications of the lecturers and more hours for exercises. The conducted didactic experiment confirms the advantages of interactive learning.

Theoretical, mathematical and statistical processing of the empirical data is presented, as well as their interpretation in the dissertation work.



In the fourth chapter titled "**Interactive model. Methodology for Conducting a Didactic Experiment**" an analysis was made of the Practical Training Interactive Model, which is aimed at enriching, confirming and supplementing the knowledge, skills and competencies of student rehabilitation therapists, which are included in the curricula of the profiling disciplines "Kinesiotherapy" and "Therapeutic massage".

**Katya Mollova**, based on the analysis, develops and approves the "Interactive Model" in the training of the "Rehabilitation therapist" specialty. It is based on the author's thesis that if the developed and proposed model is used, an educational approach will be created, including modern interactive technologies for training. By using this model, the learning process leaves the traditional structure of teaching and learning and offers more flexible interactive methods that meet the specifics of the relevant discipline and modern requirements for the learning process. These are maximum activity, interaction and approach to the real clinical environment with an emphasis on the formation of professional competences in the conditions of the practical training lesson.

The application of the model in practical training classes leads to a number of benefits in the training of student rehabilitation therapists: greater student activity; improves communication; brings students closer to the professional environment; formation of professional competences; increases students' academic motivation.

With the application of the interactive model, in the practical classes of "Kinesiotherapy" and "Therapeutic massage", students are more active, much closer to the real clinical environment, satisfied with the efforts made, improved skills and competences.

The significance of the transformative study is that the "**Interactive Model**" developed and proposed by PhD student **Katya Mollova** is tested in the conditions of a real environment.

**In the conclusion**, senior lecturer **Katya Genova Mollova** analyzes the training in the specialty "Rehabilitation therapist" as a process that needs change, given the rapidly developing technologies in education and science in general. This change includes overcoming the passive nature of traditional learning from imparting knowledge to learning that emphasizes stimulating active participation and interaction of students in the learning process, which is interactive. It aims to develop and strengthen the abilities of the future rehabilitator to effectively apply the learned knowledge and skills in the real professional environment. These methods provide a deeper understanding of the learning material and the formation of professionally relevant competencies. They create an opportunity to improve the educational experience of students by engaging them, increasing their academic motivation and supporting their development. The acquired practical knowledge, skills and competences during the educational and practical classes in "Kinesiotherapy" and "Therapeutic massage" have a significant impact on the final results in the implementation of high-quality rehabilitation activities with patients. The acquired knowledge, skills and experience are a key factor for the successful performance of students in their future professional practice.

The dissertation work provides information on learning and the relationship between students, lecturers and mentors.

The results of the study confirm the hypotheses.

**The conclusions** refer to Katya Mollova's opinion about the researched problems in the dissertation work.

**The recommendation** addressed to the **Management of the Medical Colleges training students from the "Rehabilitation therapist" specialty** will help to form professional skills and competencies in the specialists through interactive technologies.

**The contributions** of the work are of a **theoretical and practical-applied nature**. They can be formulated as:

- A study of literary sources, normative documents, interactive methods and tools, corresponding to the specifics of the practical training of the students of the "Rehabilitation therapist" specialty, was carried out.
- The opinion of lecturers, mentors and students has been studied regarding the prerequisites and conditions under which interactive learning has an optimal effect on the formation of professional competencies in future rehabilitators and helps to increase the academic motivation of the students.
- A scientifically based author's model, based on interactive methods and tools, applicable in the practical training of rehabilitation therapists has been developed.
- On the basis of the interactive model, a training methodology was developed in the practical training classes of "Kinesiotherapy" and "Therapeutic massage".
- A didactic experiment was carried out to establish the effectiveness of the applied interactive model.

**5 applications** were used in the writing of the thesis.

The presented **abstract** fully reflects the content of the dissertation work.

The PhD student presents **three publications** in connection with the dissertation work, two of which she is the sole author of and the third one of she is first author.

The presented dissertation work on the topic: "**The impact of interactive technologies on the formation of professional competences in students of rehabilitation therapist specialty**" by senior lecturer **Katya Genova Mollova**, in terms of relevance, precision of the methodology, quality of the obtained results and significance of the scientific contributions, is in accordance with the Law for the development of the academic staff in the Republic of Bulgaria, the Rules for the implementation of the Law for the development of the academic staff in the Republic of Bulgaria and meets the requirements of the Rules for the Development of the Academic Staff of the Medical University - Varna.

The stated considerations give me reason to give a **positive assessment** and to propose to the respected members of the Scientific Jury to award the educational and scientific degree "**Doctor**" in the field of higher education 7. Health care and sports, professional direction 7.4. Public health, scientific specialty "Management of health care" to **Katya Genova Mollova**.

Заличено на основание чл. 5,  
§1, б. „В“ от Регламент (ЕС)  
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Sliven , Bulgaria

Signature:.....

/ Prof. Elena Grozeva Zheleva, PhD /