

REVIEW

PhD Thesis Evaluation Report

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Faculty Public Health and Healthcare,
Department Medical and Clinical - Diagnostic Activities,

For the PhD thesis of Pavlina Penkova Teneva

with topic

PRACTICAL TRAINING OF MEDICAL LABORATORY WORKERS FOR THE FORMING OF PROFESSIONAL SKILLS AND COMPETENCIES

Scientific supervisor

Assoc. Prof. Emilia Georgieva, PhD, DSc

For awarding a Doctoral degree in the field of higher education: 7. Health care and sports, professional direction 7.4. Public Health, scientific specialty: Health Care Management.

Procedure data

Pavlina Penkova Teneva by order of the Rector of the Medical University Prof. Dr. Paraskev Stoyanov, Varna No. R-109-180 dated 26/04/2021 is enrolled as a doctoral student in an independent form of study in the Doctoral programme in Healthcare Management at the Department of Healthcare, Sliven Branch of Medical University, Varna for acquiring a Doctoral degree in the field of higher education 7. Health care and sports, professional direction 7.4. Public Health, in Health Care Management Doctoral Programme. On 14.12.2022, at the departmental council of the Department of Health Care, Sliven Branch of the Medical University of Varna, the readiness for public defense of the PhD candidate was established and a proposal was made for the composition of a PhD Thesis Examination Committee.

I present this opinion in my capacity as a member of the PhD Thesis Examination Committee, selected and voted by the Academic Council of the Medical University - Varna (Protocol No. 61/09.01.2023) and appointed according to the Order of the Rector of the Medical University - Varna No. R-109-22 of 17.01.2023 to ensure a procedure for the defense of a PhD thesis with topic "*Practical training of medical laboratory assistants for the formation of professional skills and competences*", developed by *Pavlina Penkova Teneva*, Doctoral student in the Department of Health Care, branch - Sliven of the Medical University - Varna. According to protocol No. 1/17.01.2023 of the first meeting of the PhD Thesis Examination Committee, I am appointed to present an evaluation report on the PhD thesis.

The presented set of materials on paper and electronic media has been prepared in accordance with the Development of Academic Staff in the Republic of Bulgaria Act and the Regulations for the Development of the Academic Staff of MU-Varna.

The PhD thesis proposed for defense “*Practical training of medical laboratory workers for the forming of professional skills and competencies*” is the result of *Pavlina Teneva*'s many years of dedicated work as a teacher and researcher based on her professional qualifications and professional realisation.

Education and training

After completing her basic medical education, specialty Medical Laboratory Assistant at the Trakia University - Medical College in 2000, *Pavlina Teneva* continued her professional development and training. In 2003, she obtained a Bachelor's degree in Social Activities at the University of Veliko Tarnovo *St. St. Cyril and Methodius* and a Master's degree in 2009 in Health Care Management at the Medical University *Prof. Dr. Paraskev Stoyanov*, Varna.

Professional realisation

From 2001 to 2009, she worked as a medical laboratory assistant at University Multi-Profile Hospital for Active Treatment Stara Zagora, EAD Stara Zagora; 2009 – 2016 lecturer, head of the specialty Medical Laboratory Technician at the College of Medicine - Trakia University; 2016 – 2019, Senior Lecturer at Medical College - Trakia University and from January 2020 until now Deputy Director of Medical College - Trakia University, Stara Zagora.

Her academic development began in 2009 and continues until now as a doctoral student in an independent form of study at the Sliven Branch of the Medical University *Prof. Dr. Paraskev Stoyanov* Varna, Department of Health Care.

From 26.04.2021, *Pavlina Penkova Teneva* has been enrolled as a doctoral student in an independent form of study in the Doctoral programme in Health Care Management at the Health Care Department, Branch - Sliven at the Medical University *Prof. Dr. Paraskev Stoyanov* Varna. She teaches classes in the study disciplines Clinical Laboratory, Clinical Practice and Quality Control in Laboratory Practice. The PhD candidate has 3 scientific publications in connection with the PhD thesis, she is fluent in English and Russian.

Characteristics of the PhD thesis

The PhD thesis developed by *Pavlina Teneva* contains 122 pages, with the standard structure for the professional field and includes: introduction (2 pages), First Chapter *Theoretical foundations of the researched problem* (52 pages); Second Chapter *Methodology and organisation of scientific research* (7 pages); Third Chapter *Own research* (44 pages); Findings; Recommendations and contributions (4 pages); References (16 pages) and Appendices (5). The content corresponds to the topic and reflects the results of the research done by the PhD candidate. The bibliographic reference contains 158 titles, of which 70 are in Cyrillic, 84 are in Latin characters and 4 are from the Internet.

Assessment of the topic relevance

The PhD thesis of *Pavlina Teneva* deals with a current, essential and significant problem related to revealing the influence of practical training of students, specialty Medical Laboratory Technician, for forming of professional skills and competencies.

The thesis examines the development of professional skills and competencies for acquiring safe practices, compliance with standard safety measures, since clinical laboratory tests are crucial for health assessment. This makes the chosen topic relevant, interesting and worthy of a PhD thesis.

The **introduction** presents the social, scientific and practical significance of the researched problem.

Literature review

The literature review in structural terms includes 6 parts dedicated to different aspects of the studied problem.

The first part logically introduces the definition and characterisation of the concepts of “competencies” and “competence”. Based on the literary sources, the author has thoroughly examined various types of competences and competences that acquire more and more practical significance over time.

The second part of the literature review is about the general characteristics of the Medical Laboratory Technician specialty. Emphasis is placed on the basic skills for working in the clinical, microbiological, virological, histological and parasitological laboratories, and the opportunities for realisation of the medical laboratory technician.

In the third part of the literature review, the Legal Regulations for acquiring the specialty Medical Laboratory Technician in the Republic of Bulgaria are described; the study documentation for the Medical Laboratory Technician specialty is presented, in accordance with the Higher Education Act: Qualification characteristics, Study plan, Study programmes, Annual schedule of the study process, as well as the organisation for its development and approval.

The fourth part of the literature review thoroughly analyses the learning process in the medical college. The main functions of the pedagogical environment /educational, formative and professional/ have been examined; educational forms, tasks, organisation and conduct of practical training: practical training classes, training practice, summer and pre-diploma internship.

The literature review in its fifth part analyses the role of the teacher in the forming of the professional competences of the students of the Medical Laboratory Technician specialty. The functions of the teacher, which help to optimise the process of formation of the medical laboratory technician with the help of the used methods of conducting the practical training, are considered.

The sixth part of the literature review reflects the modern needs and requirements of the clinical-laboratory practice for the professional training of medical laboratory technicians for practicing the profession.

The literature review and the bibliographic reference reveal a wide awareness of the PhD candidate of the reviewed topic.

Methodology and organisation of the research

In chapter II *Pavlina Teneva* presented the aim, tasks, working hypotheses and methodology of the PhD thesis. The main goal is precisely and clearly stated: “To study the formed professional skills and competencies of medical laboratory students with a view to optimising their practical training”. It is developed in four (4) correctly formulated tasks, the implementation of which reflects the research work carried out by the *PhD candidate*. There are 3 working hypotheses. The methodology is presented in detail. The study included 184 persons, divided into three groups of respondents:

Group I - 114 students from the specialty Medical Laboratory Technician in Medical College Stara Zagora (63) and Medical College Varna (51).

Group II - 49 medical laboratory technicians practicing the profession in the cities of Stara Zagora, Sliven, Yambol, Haskovo and Kardzhali.

Group III – 21 laboratory doctors with the specialty Clinical Laboratory and senior laboratory assistants in medical-diagnostic laboratories Stara Zagora, Sliven, Yambol, Haskovo and Kardzhali.

The organisation of the research is presented in detail - subject, object, volume, stages,

methods, criteria, indicators and tools.

Documentary, sociological and statistical methods were used in the study. Three questionnaires were developed with 19, 18 and 11 questions each. The study was conducted after approval by the Research Ethics Committee at Medical University - Varna with Decision No. 107/28.10.2021; was carried out independently in several stages in the period November 01.11.2021 - February 28.02.2022, through three types of anonymous survey cards in the cities of Varna, Stara Zagora, Sliven, Yambol, Haskovo and Kardzhali.

The PhD candidate presents the results of her own research and their discussion in Chapter Three of her PhD thesis.

The third chapter presents the research model, reveals the real state of the problem in practice, provides the obtained results of the ascertaining research. A thorough analysis of the results was made. Theoretical, mathematical and statistical processing of empirical data and their interpretation is presented.

The contributions of the PhD thesis can be formulated as follows:

Contributions of a theoretical-cognitive nature

The importance is emphasised and an in-depth analysis is made revealing the influence of the training of the students in the specialty of medical laboratory technician for the formation of professional skills and competencies.

An in-depth analysis of the opinion of students and practicing medical laboratory technicians about the level of their professional competence formed in the conditions of the training process was made.

The opinion of experts in the field of Clinical Laboratory on the preparation of medical laboratory workers and their readiness for independent work was analysed.

Contributions of applied nature

The presented teaching aid "Rules for taking biological material for clinical-laboratory research" has a high practical value for optimising the learning process and forming professional skills and competencies of students - medical laboratory technicians in the conditions of practical training.

The development of "Clinical laboratory constellations in patients with Sars-Cov-2" with their subsequent inclusion in the training of students, specialty medical laboratory technician, will contribute to the formation of their professional skills and competencies.

The discipline "Sources of error in the stages of the laboratory process" proposed to be offered for study as an elective one will complement and upgrade the students' knowledge of errors made in the laboratory process, knowledge necessary to provide quick, timely and useful medical information for diagnosis, treatment, and prevention of diseases.

Based on the results of the research, the analysis of the literature and the international experience, 7 conclusions were formulated, which in a synthesised form reflect the results of the research. The conclusions reflect the realisation of the set tasks of the study. I would recommend *Pavlina Penkova* to continue working on the chosen topic by preparing informative material in a suitable form in a publication intended for medical professionals, which could be a useful end to the efforts made by the PhD candidate.

The contributions are formulated in a broad-based way. In connection with the PhD thesis, the PhD candidate presented three publications, one of which was co-authored by *Pavlina Penkova*.

The abstract meets the generally accepted requirements in terms of structure. The content of the PhD thesis is reflected fully and accurately. The most significant results and established dependencies, as well as the conclusions, contributions, and recommendations of the study are presented.

Conclusion

The presented PhD thesis "*Practical training of medical laboratory assistants for the formation of professional skills and competences*" shows a thorough mastery of the studied subject by the PhD candidate. I appreciate the importance and relevance of the topic of the PhD thesis. *Pavlina Teneva* has chosen the topic of her PhD thesis not by chance, but guided by her professional experience in the field of health care. When developing her PhD thesis, the PhD candidate has demonstrated skills in applying the methodology of research work, which is one of the goals of doctoral education. The conducted research corresponds to the set tasks.

On the basis of the above, I give my positive vote and propose to the respected members of the PhD Thesis Examination Committee to vote in favour of awarding a Doctoral degree in specialty Health Care Management to *Pavlina Penkova Teneva*.

30.01.2023

Ruse

Assoc. Prof. Kristina Zaharieva, PhD

