REVIEW

by Prof. Maya Lyubomirova Vizeva, PhD

Medical University – Sofia, Medical College "Y. Filaretova"
External member of the Scientific Jury, according to Order No. P-109-154/ 27.03.2026 of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" city of Varna

Subject: Dissertation work for awarding of educational and scientific degree "Doctor" in the Scientific specialty: "Healthcare Management", Professional field: 7.4. Public Health, Higher Education Area 7. Health and Sports

Author of the dissertation: Elka Dancheva Kostova, a doctoral candidate in Health Care Department at the Medical University "Prof. Dr. Paraskev Stoyanov" Varna, Sliven Branch

Title: "Modern competencies of the X-ray laboratory assistant when working with digital dental imaging"

Scientific supervisor: Assoc. Prof. Svetlana Peneva Angelova, PhD

I. GENERAL OVERVIEW OF THE PROCEDURE

This review is prepared in my capacity as an external member of the scientific jury within the framework of the procedure for awarding the educational and scientific degree of "doctor", in accordance with the current regulations and approved academic standards.

The presented dissertation is in full compliance with the Law on the Development of the Academic Staff of the Republic of Bulgaria, the Regulations on the Terms and Procedure for Acquiring Scientific Degrees and Holding Academic Positions at the Medical University "Prof. Dr. Paraskev Stoyanov" town of Varna.

The work meets the requirements for volume, content and scientific reasoning, typical of dissertations in the field of public health.

II. PROFESSIONAL BIOGRAPHY AND ACADEMIC DEVELOPMENT OF THE DOCTORAL STUDENT

Elka Dancheva Kostova has a consistently built professional and academic trajectory, characterized by sustainable development in the field of imaging diagnostics and healthcare.

Born on 15.04.1979 in the city of Shumen, she graduated with a degree in "X-ray Laboratory Assistant" at the Medical University - Plovdiv. Subsequently, she acquired the educational and qualification degrees "bachelor" and "master" in "Healthcare Management" at the Medical University - Varna, as well as a specialization in Public Health.

Elka Kostova's professional experience includes extensive practical work in imaging structures, which formed a deep understanding of the technological, organizational and clinical aspects of the profession. Since 2020, she has held the academic position of "assistant", and since 2024 she has been the head of the "X-ray Laboratory Assistant" training sector, which testifies to her active commitment to training and the formation of professional competencies.

The doctoral student's scientific activity includes 10 publications, participation in scientific forums and research projects. This set of activities outlines the profile of a specialist whose research issues are directly determined by professional practice and teaching commitment.

III. CONTENT ANALYSIS OF THE DISSERTATION

General characteristics of the dissertation

The dissertation is developed in a volume of **178** typewritten pages and is structured in an introduction, **5** chapters, conclusions, recommendations, contributions, a list of literature used and applications.

The work is richly illustrated through visual and analytical materials, including **67** figures, **14** tables and **5** applications, which support the interpretation of the results, ensure clarity in the presentation of data and contribute to the transparency of the research process.

The bibliographic list includes **232** sources, with a predominant participation of foreign publications. The literature used covers modern scientific research, international standards and guidelines, as well as developments in the field of digital imaging

diagnostics and artificial intelligence, which provides a current and reliable theoretical basis for the study.

The presented dissertation is structured as a completed scientific study with clearly distinguished structural components – introduction, analytical review of the scientific literature, methodological framework, results, discussion, conclusions, recommendations and formulated contributions. There is an internal logical consistency and coherence between the set goals, research tasks, methods used and results obtained.

The dissertation is oriented towards issues developed in the field of interaction between healthcare, imaging diagnostics and the digital transformation of medical practice. The research is complex in nature and combines theoretical analysis, empirical research and development of applicable educational solutions.

Relevance, scientific significance and conceptual perspective

The relevance of the study is determined by the accelerated development of digital technologies in healthcare, which lead to a significant transformation of both diagnostic processes and professional roles. In this context, imaging diagnostics is being established as an area in which technological progress changes not only the tools but also the content of professional activity.

Accordingly, the significance of the dissertation work is expressed in its focus on analyzing and understanding the competence profile of the X-ray laboratory assistant in the digital environment and on adapting educational training to modern requirements.

Adequacy of goals and tasks

The goal of the dissertation is aimed at clarifying the contemporary dimensions of the competence of the X-ray laboratory assistant in the conditions of digital dental imaging diagnostics and at assessing the correspondence between training and professional practice. It is specified through tasks related to the analysis of the development of imaging diagnostics, research of the competency profile, assessment of educational preparation, identification of deficits and development of educational solutions.

The goal and tasks are logically interconnected and correspond to the subject of the study. An opportunity for a clearer distinction between analytical and applied aspects can be noted.

Methodology and research approach

The methodological design is clearly structured and corresponds to the set goals and tasks.

The empirical study was implemented through a multicomponent design, including teachers (n=24), students (n=127), practicing specialists (n=113), employers (n=46) and experts (n=7).

The study was conducted in various educational and medical structures in the country.

Survey methods, semi-structured interviews, expert assessment and statistical analysis were used, which provides a multi-layered analysis of the problem.

The formulated hypotheses are adequate and are confirmed in the results of the study.

Results, analysis and interpretation

The results obtained clearly reveal structural discrepancies between the dynamics of technological development, the level of training of specialists and the content of educational programs.

The need to update the curriculum, introduce new forms of training and develop digital and analytical competencies is established.

The analysis is not limited to a descriptive level, but places the results in the context of healthcare management and educational policy.

Practical developments

Within the framework of the dissertation, a curriculum for the discipline "Digital Dental Imaging" was developed, an electronic library with imaging resources was developed and activities on a scientific project related to three-dimensional imaging technologies and digital methods were implemented.

These results demonstrate the ability to transform theoretical propositions into concrete educational solutions.

IV. EVALUATION OF PUBLICATIONS ON THE DISSERTATION

The presented scientific publications are thematically relevant to the dissertation issues and reflect the main directions of the research.

Among them, the following stand out:

- modern methods in dental imaging;
- analysis of diagnostic errors and their prevention;

• application of digital technologies in education.

The total number of publications (10) is adequate for the stage of academic development and includes works published in established scientific journals. Their content demonstrates the ability for scientific analysis, systematization and presentation of results. The publication activity can be assessed as corresponding to the requirements for acquiring the educational and scientific degree "doctor".

V. ABSTRACT

The dissertation abstract has been prepared in accordance with the established requirements and presents in a synthesized form the main characteristics of the dissertation work - goals, objectives, methods, results, conclusions and contributions. It correctly reflects the content of the study and fulfills its function of presenting its scientific essence in a concentrated manner.

VI. SCIENTIFIC AND SCIENTIFIC-APPLIED CONTRIBUTIONS AND PRACTICAL APPLICABILITY

The dissertation contains clearly identifiable scientific and scientific-applied contributions, which are logically related to its practical orientation and the possibilities for implementing the results obtained.

In scientific terms, the contributions are expressed in the systematization and understanding of the competence model of the X-ray laboratory assistant in the conditions of a digital environment, as well as in the empirical identification of existing deficits in the training of specialists. The study contributes to expanding the understanding of competence as a dynamic and multi-component category, influenced by technological transformations in medical practice.

The contribution related to the development of an educational model consistent with the emerging technological changes, which combines theoretical statements with empirically based solutions, is significant.

The scientific and applied nature of the work is expressed in the creation of specific training resources, including a curriculum for the discipline "Digital Dental Imaging" and an electronic library of imaging materials. These developments represent real tools for implementation in educational practice and create prerequisites for improving the quality of training of specialists.

In a broader context, the work contributes to the development of management approaches in healthcare by integrating the digital factor as a determining element in the transformation of professional activity.

VII. DIRECTIONS FOR DEVELOPMENT AND APPLICATION OF THE RESULTS

The dissertation reveals significant potential for subsequent development and expansion of the research issues in both scientific and applied areas.

In the future, the results can be further developed through a broader consideration of the ethical dimensions of digital imaging, especially in the context of modern digital and intelligent technologies.

There are opportunities for further enrichment of the study by expanding the international comparative context, which would contribute to a clearer positioning of the processes under consideration within the framework of modern global trends.

In a theoretical aspect, the study creates prerequisites for further conceptual development and refinement of the interrelationships between key categories such as "competence" and "professional responsibility".

The results of the dissertation have the potential for wide application in the academic and postgraduate training of specialists, as well as in the development of research and educational projects in the field of digital imaging. In order to popularize and sustainably develop the achieved results, it can be recommended to present them in an expanded form in a separate monographic work dedicated to the current issues under consideration.

X. CONCLUSION

The dissertation work of Elka Dancheva Kostova represents an independent and in-depth study, aimed at a clearly defined and current issue, developed in the context of the contemporary processes of digital transformation in healthcare. The development is distinguished by consistency in the presentation, logical connection between goal, tasks, methodology and results, as well as a well-argued scientific approach.

The goal has been achieved, as the formulated research tasks have been solved through appropriate methods and adequate analysis. The author demonstrates in-depth theoretical knowledge, the ability to interpret complex processes and the ability to integrate scientific and applied aspects into a single research framework.

The dissertation contains scientific, scientifically-applied and applied results that contribute to the development of medical education and practice in the field of imaging diagnostics and healthcare, in accordance with modern technological and organizational requirements.

The submitted work meets the requirements of the Law on Academic Staff Development in the Republic of Bulgaria, the Regulations for its implementation, as well as the internal regulatory documents of the relevant higher education institution.

Based on the stated merits of the submitted dissertation "Modern competencies of the X-ray laboratory assistant when working with digital dental imaging", I confidently give my **positive assessment** for the conducted research, presented by the above-reviewed dissertation, abstract, achieved results and contributions, and I propose to the esteemed Scientific Jury to award **Elka Dancheva Kostova** the educational and scientific degree **"Doctor"** in the Scientific specialty "Healthcare Management", professional field 7.4. "Public Health", field of higher education 7. "Healthcare and Sports".

Date: 15.04.2026
Place: Sofia

Reviewer Заличено на основание чл. 5, §1, б. „В“ от Регламент (ЕС) 2016/679 ....

Prof. Maya Vizeva, PhD