

STATEMENT

by **Assoc. Dr. Isa Isa Hadjiali** , Sofia University "St. Kliment Ohridski", Faculty of Biology,
Department of Teaching Methods in Biology

of a dissertation for awarding the educational and academic degree "doctor" (PhD) in: field of
higher education: **1. Pedagogical studies** ,
professional range: **1.3. Pedagogy of teaching in...** ,
PhD program: **Teaching methodology in biology**

Author: **Maya Ivanova Gacheva**

Topic: *Content of biological education in the Bulgarian and Californian educational systems - a comparative analysis* .

Supervisors: Assoc. Dr. Nadezhda Stefanova Raycheva and Assoc. Dr. Iliana Ognyanova Petkova

1. General description of the presented materials

By order No. RD - 38-287/ 05. 06. 2024 of the rector of SU "St. Kliment Ohridski" I have been appointed as a member of the academic jury to ensure a procedure for the defense of a dissertation work on the topic: *Content of biological education in the Bulgarian and Californian educational systems - a comparative analysis*, for the acquisition of the educational and academic degree "**doctor/PhD**". The set of materials presented by the PhD student is in accordance with Art. 63 (1) of the Regulations on the conditions and procedures for acquisition of academic degrees and positions RCPAADP of SU "St. Kliment Ohridski". I have been provided with all the required materials, diligently arranged in a list. By accepting what has been declared, I certify that the results and contributions in the dissertation research are the author's work and none are taken from research and publications in which the candidate has no participation (plagiarism), and also that everything presented corresponds to the truth.

2. Relevance of the topic and appropriateness of the set goals and tasks

The content of biological education can be considered as a pedagogically adapted model of social experience for the formation and development of the modern personality. The content of social experience in the biological direction is a product of the development of biological science and emerging social problems aimed at the nature and the human being as a part of it. The content model of biological education includes the methodically transformed elements of scientific-biological knowledge. The object-subject areas of biological knowledge - living systems from the various levels of organization of living matter, are divided into study subjects (study disciplines) - Man and Nature and Biology and Health Education. The content of education is directly dependent on the main goals of education, generally defined as a social order.

For the period 1974 - 2024 (50 years), 41 PhD theses were defended for awarding the degree candidate of pedagogical studies or educational and academic degree "doctor/PhD" in the field of Biology teaching methodology. The PhD thesis developed by Maya Gacheva is the first in the field of biomethodological research dedicated to comparative education. This pioneering research is of exceptional value for the development of pedagogical studies and, in particular, for the Biology Teaching Methodology.

3 . Knowing the problem

The second chapter of the dissertation text is dedicated to the competence approach and the content of the training. The following were analyzed: - the content of the education as the main construct of the didactic issues; - the documentation related to the content of the education; - the curriculum as a basic normative document - essence and manifestation in the Bulgarian education system; - specificity of study documentation in the USA; - the national educational standards for educational content in the Bulgarian educational system; - the educational standards in the USA and the curriculum in the Bulgarian educational system (total volume 61 standard pages). In the third chapter, entitled Theoretical analysis of instructional documentation focused on realizing the concept of content in the learning process, a theoretical analysis and synthesis of instructional documentation related to the implementation of instructional content, textbooks and teaching/study aids in the USA and scales for evaluation and method for equating values in Bulgaria and the USA (79 pages). The bibliography includes 77 literary sources and 50 Internet resources. At the same time, this very good unbiased analysis of the state of the problem in the specialized literature, based on up-to-date and authoritative researched and scientifically-correctly used titles, in an acceptable - discreet way contributes to the quality of the dissertation research.

4 . Research methodology

Methodologically, the research is organized with a clearly defined object, subject, objectives at the theoretical and empirical level and research questions. The research was carried out in three stages. First stage – methodological, related to determining the subject and aspects of the comparison, second stage – information provision of the comparison and third stage – actual comparison. As extremely valuable, from a methodological point of view, I value fig. 1, p. 14., titled content of the methodological stage of the research.

Chapter 4., entitled "Analysis of the results of the students' evaluation", scientifically literate author presents the results of the conducted dissertation research in a comprehensive and meaningful way. I can't help but share my personal and biased satisfaction with the applied statistical procedures, the quality of the presented figures, and the well-formulated statistical hypotheses that were verified. In a comparative aspect, the achievements of the students in Man and Nature V grade and in Biology and Health Education VII, IX and X grades, for a period of five academic years (2018/2019 - 2022/2023), studied according to the Bulgarian and the Californian education system.

5 . Characteristics and evaluation of the dissertation work

Mrs. Gacheva's dissertation is a scientific product with indisputably positive qualities of empirical pedagogical research in the Teaching Methodology of Biology. The work is formatted in a synthesis whole - main part and appendices, which allows to evaluate the overall theoretical-methodical and methodical-practical contribution.

The main part of the dissertation is appropriately organized into an introduction, four chapters, conclusions, contributions and recommendations. Total volume 190 pages of text, 16 tables and 37 figures. I consider the appendices (in a volume of 63 pages) to be relatively independent from the point of view of the contribution nature of the entire dissertation.

6 . Contributions and significance of the development for science and practice

The candidate has identified six contributions - four at the scientific-theoretical level and two at the practical-application level. The contributions are absolutely relevant to the scope of the comparative study and the obtained empirical data-results.

7. Evaluation of publications on the dissertation work

The applicant has attached a list of 3 independent publications, published in the period 2022 - 2023. Two of them are in the journal Education in Natural Sciences and Advanced Technologies and one in the journal Pedagogy. These publications carry a total of 50 points, which is in accordance with the minimum national requirements for awarding the EAD "doctor", by field of higher education 1. Pedagogical studies.

8. Personal participation of the PhD student

The personal involvement of the PhD student is undoubtful. The style is recognizable, both in the dissertation, the abstract, and in scientific publications. My grade of the PhD student's research skills is excellent.

9. Abstract

The abstract is 59 pages long. It is designed according to the requirements and in a synthesized form reflects the goals, tasks, methods used, results, conclusions and recommendations.

10. Critical remarks and recommendations

In essence, I have no critical remarks towards Maya Gacheva, but I would make one recommendation - to publish the main part of the dissertation work in the form of a book, in order to reach a wider range of readers .

11. Questions

I have a question for Mrs. Maya Gacheva. *If she had to choose teaching-methodical complexes (textbook, study notebook and teacher's book) for Man and Nature and Biology and Health Education, which complexes would she choose - those developed for the Bulgarian or those for the Californian educational system?*

12 . Personal impressions

I know Maya Gacheva in the process of her studies in the PhD program at the Department of Teaching Methods in Biology. During the whole process she was distinguished by exceptional diligence and creativity.

CONCLUSION

Mrs. Gacheva's dissertation work, in terms of idea, relevance of the problem, research concept, development, results and contributions fully meet all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB) and the regulations for its application. The materials presented by the PhD student are in accordance with the RCPAADP of SU "St. Kliment Ohridski".

M. Gacheva possesses in-depth knowledge and professional skills in the field of Biology Teaching Methodology, demonstrating qualities and skills for independent conduct of scientific

research. Based on everything stated above, I give my positive vote and propose to the honorable academic jury to vote positively and award **MAYA IVANOVA GACHEVA** the educational and academic degree "**PhD/DOCTOR**" in the field of higher education - 1. Pedagogical studies; professional range – 1.3. Pedagogy of teaching in ...; PhD program - Teaching methodology in biology.

22. August 2024

Signature:.....
(Assoc. Prof. Isa Hadjali)