

## STATEMENT

by **Assoc. Prof. Isa Hadjjali, PhD**

Sofia University St Kliment Ohridski, Faculty of Biology,  
Department of Methodology of Teaching Biology

on the dissertation for awarding a PhD degree in the

Scientific field: **1. Pedagogy,**

Professional field: **1.3. Pedagogy of teaching ...**

PhD Programme: **Methodology of Teaching Biology**

**PhD candidate: Lyudmila Marincheva Marinova- Boyadzhieva**

**Title:** *A Concept of Developing Practical Skills in Teaching Biology in a Foreign Language*

**Supervisor:** Assoc. Prof. Aneliya Kremenska, PhD

### **1. General overview of the presented materials**

I was endorsed as a member of the scientific jury for the viva of a PhD candidate work on “A concept for developing practical skills in biology in English education” by an act 38 – 138 from 13. 03. 2024 issued by Sofia University Rector. The documents presented by the PhD candidate comply with the requirements of Article 63 (1) of Sofia University Regulations of the Academic Staff Development. I was presented with all the required materials, diligently enlisted. Accepting the declared, I confirm that the results and contribution of the PhD candidate’s research are authentic candidate’s work and there is no plagiarism, as well as the work presents truthfully the findings.

### **2. Topicality and adequacy of the goals and tasks**

The dissertation area of research topicality can be viewed in the following aspects: 1. Content and Language Integrated Learning, in contrast to the purely content oriented learning; 2. competency-based education as a research field and contemporary educational paradigm in global context; 3. the skill viewed as an integral construct of information and practice; 4. natural sciences literacy as a holistic construct, encompassing different dimensions and practical skills as a form of subject-determined knowledge; 5. the learning task as a leading model of the learning context in diverse schemes: practice and analysis, practice and research, and practice and performance; 6. electronic resources; and 7. e-learning, distance and hybrid learning. The PhD candidate L. Boyadzhieva successfully focuses on these research interests within the chosen field. In the very beginning I would like to state the significance of the chosen research focus for the development of the scientific field of Methodology of teaching biology.

### **3. Dissertation scope**

The dissertation text, and more specifically Chapters 2 and 3, prove that the PhD candidate not only has an in-depth understanding of the problem of developing practical skills in biology in English, but is capable of competently conducting a research in the field. A wide variety of concepts is discussed and these have been skillfully incorporated in the biology teaching practice investigation. Especially positive is the constructive approach to incorporating a set of diverse ground research, by a representatives of different schools, including acknowledging sometimes contradicting views. Through competent grouping based on comparing similarities and

differences, Boyadzhieva managed to highlight the positive sides of these and to build upon them her own research concept. Furthermore, this excellent and unbiased analysis of the status quo of the problem within the scientific field, based on 1234 current works (95 in Cyrillic and 139 in English), properly cited throughout the dissertation, helped to establish an eligible and justified own concept.

#### **4. Research methodology**

The research methodology is organized around clearly defined subject, object and goals at theoretical and empirical levels, research questions and a hypothesis. I would suggest to present the working hypothesis in a more generalized way. Including more than one dependent variable could lead to a less clear research concept. However, apart from the suggested improvement of the working hypothesis, I would like to state that the research programme has been successfully completed.

PhD candidate Boyadzhieva's dissertation differs from the commonly found short-term and fragmented pedagogical investigations. It was conducted in four stages between 2020 and 2023. The first stage was in online environment, the second and third- hybrid, and the fourth – face-to-face. The focus group included 179 students (9 – 10 grade), who studied in the Language School in Pleven. Chapter 4: Analysis and discussion of the results contains a competent in-depth analysis of the research data. I would highlight the results of the practical tasks “Home lab”, “Modeling”, “Crossword”, “Antropogenesis”, “Digital microscopes”, etc. The data were processed by applying variation analysis, through a standard for such type of research set of procedures.

#### **5. Characteristics and assessment of the work**

The dissertation presented by PhD candidate Boyadzhieva is a scientific product with unquestionable quality of empirical pedagogical research in the field of Methodology of teaching biology. The work is a composite whole: a body and appendices, which provides evidence for assessing the theoretical and practical methodological contributions.

The main body of the dissertation is adequately organized in introduction, five chapters, summary, contributions and conclusion. The volume is 242 pages of text, 12 tables, 60 figures. The second part (77 pages) consists of 35 appendices. The latter are relatively stand-alone from the dissertation contribution point of view.

#### **6. Contributions and significance of the research for the scientific field and teaching practice**

The PhD candidate has drawn eleven contributions – four theoretical in the field of methodology and seven in the teaching practice. Having acknowledged these, I would advise on presenting them in a slightly more concise manner.

#### **7. Assessment of the published papers on the research**

The candidate enlisted 4 works related to the research, published between 2020 and 2022. Two of these are in Bulgarian, and two in English; three are single authored and one is co-authored by the supervisor. These works comply with the minimal national requirements for granting a PhD degree in the field of Pedagogy.

#### **8. Personal contribution**

The personal contribution of the candidate is undoubted. The style she exhibits is clearly distinguishable, in both the dissertation and abstract, as well as in the presented published works. The research skills of the candidate can be regarded as excellent.

#### **9. Abstract**

I would like to state that the abstract truthfully records the main findings of the research dissertation.

#### **10. Notes and recommendations**

I would like to suggest some recommendations regarding further research:

1. To apply additional tests (parametric and non-parametric) to verify the statistical hypotheses;
2. To introduce more detailed structural and functional characteristics of the practical skills.

#### **11. Questions**

I would like to present the candidate with the following question: Would you comment on the comparison between the concept of “*action research*” and one of the forms of reflection after D. Shaun - “*reflection in action*”.

#### **12. Personal notes**

I have known the candidate Lyudmila Boyadzhieva since her Master’s Degree study with the Department of Methodology in Biology. Even then she was notably hardworking and creative, therefore she naturally was welcomed to continue her research as a PhD student.

#### **CONCLUSION**

The PhD candidate dissertation complies with all legal requirements, both at national and university level, in conceptualization, significance, conducting research, and contribution.

Ms Boyadzhieva has proven in-depth knowledge and professional skills in the field of Methodology of teaching biology, and has exhibited qualities and skills for autonomous scientific research.

Having taken all of the above into consideration, I wholeheartedly vote in favour of granting Ms Boyadzhieva a PhD degree in the scientific field 1. Pedagogy, 1.3. Pedagogy of teaching..., within the PhD programme Methodology of Teaching Biology.

06 May 2024

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