

O P I N I O N

**about a PhD thesis of Lyudmila Marincheva Marinova- Boyadzhieva
for the Acquisition of the Educational and Scientific Degree PhD in
Professional Direction 1.3. Pedagogy of teaching in...
(Methodology of teaching in biology)**

**Title: Concept of formation of practical skills in teaching biology in a
foreign language**

Jury member: Prof. Eugenia Kovatcheva, PhD

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The opinion was prepared on the basis of:

- Order of the director of the SU Rector, RD-38-138/12/03.2024;
- First meeting of the scientific jury from 26.03.2024.

1. General characteristics and relevance of the PhD thesis

The relevance of the dissertation work on the concept of the formation of practical skills in the teaching of biology in a foreign language is indisputable since the knowledge of a foreign language is one of the main competencies these days. New generations require new approaches to learning, some of which are presented by the Ph.D.

The dissertation consists of 244 pages and 80 appendices, 240 sources are used. The work is divided into four chapters.

The PhD student has clearly defined the set goals and research questions. In principle, the goals can be considered as logically connected tasks; the goal is to create a Concept for the formation of practical skills in the teaching of biology in a foreign language.

2. Knowledge of the problem, the competence of the doctoral student in the scientific field, publications and participation in scientific forums

The PhD student is fluent in the terminology of the researched field. The literary sources used to cover a period of 55. Only 1/8 are from the last 10 years. The overview shows knowledge of current trends.

Only three articles have been provided in total, one of which is in English. The

complete text of the publication is missing from the list submitted for defense - a chapter of a collective monograph jointly with its scientific supervisor. The four publications are enough to cover the minimum educational requirements, they are even 10 points more.

3. Research methodology

The PhD student Lyudmila Boyadzhieva thoroughly researched and analyzed the existing literature on teaching biology in a foreign language. The theoretical framework and the derived key knowledge, the described stages of the research, as well as the systematic approach to the preparation of the dissertation are impressive.

The structured task types in Chapter 3 can be used directly by teachers of foreign language teaching in biology. Good practices from the study of the influence of applying practical tasks in biology in English on the formation of practical skills, the achievement of competences, attitudes towards the subject of biology are presented, which enriches the dissertation work.

4. Evaluation of the candidate's results and contributions

The doctoral student defines 9 contributions without defining exactly which ones are theoretical and which ones have practical-applied significance.

The first and fourth contributions thus formulated:

- "The theoretical analysis of the identified correlation task - formation of practical skills in natural sciences in an electronic environment has been extended."
- Instructions for assigning the tasks in an electronic environment, with options for other media, have been constructed.

are not clear.

I think there is a typo, but I ask the PhD student to clarify the "theoretical analysis of the identified correlation task".

In the text, "other medium," it means paper; if that is all that is meant, I cannot accept it as a contribution.

5. Opinions, recommendations and remarks on the dissertation work

The confirmation of the working hypothesis is presented clearly in the paper, but its formulation itself requires a little more clarity.

In formatting, it would be good not to leave "big" empty fields, but to have more

flexibility of the text, for example, on page 83 there is a lot of space left, because Figure 7 cannot fit in the remaining space. As for figure 7 itself, it would be good if it was a little bigger and the text in it was not only in capital letters, because this creates a "shouting" effect, takes up more space and is more illegible. Centering is not always the best solution Figure 7 is not an isolated case, the style of some figures is similar.

It is commendable that evaluation criteria have been developed for each task. The main source for criteria is more than 30 years old. I would recommend paying attention to some more modern sources and the use of so-called rubrics (Ambrose S, Bridges M, DiPietro M, Lovett M, Norman M (2010) *How Learning Works, 7 Research-Based principles for Smart Teaching* , Jossey-Bass, ISBN 978-0-470-48410-4

6. Personal impressions of the PhD student

I do not personally know PhD student Lyudmila Marinova-Boyadzhieva

7. Conclusion

The recommendations and remarks made do not detract from the value of the development.

The doctoral student has in-depth theoretical knowledge of the subject, as well as the ability to conduct independent scientific research and practical implementation of the achieved results.

I believe that the dissertation is up-to-date, the research done and analyzed on the influence of practical tasks in biology in English on the formation of practical skills, the achievement of competences, the attitudes towards the subject of biology may find application in the school biology course.

The presented dissertation, in terms of the volume and significance of the research, represents a thorough and complete research development, contains sufficient scientific, scientifically applied and applied contributions. The requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for its implementation, as well as the Rules and Procedures for the Admission and Training of Doctoral Students and the Acquisition of a Doctor of the National Academy of Sciences, have been met.

I believe that the work presented is an independent work of the doctoral student and the sources used are correctly cited in the text and described in the bibliography. The

work has been checked in a plagiarism system.

The achieved results give me reason to propose to the scientific jury to award the doctorate degree to doctoral student Lyudmila Marincheva Marinova-Boyadzhieva in professional direction 1.3. Pedagogy of teaching in... (Methodology of teaching in biology).