

REVIEW

On dissertation

For obtaining the educational and scientific degree "Doctor"

**In professional field 1.3. Pedagogy of Education in...(Methodology of Education in Biology)
in the procedure for defence**

at the Faculty of Biology of the Sofia University "St. Kliment Ohridski"

The review was prepared by Prof. Dr. Tatiana Gavrilova Angelova as a member of the scientific jury according to the Order RD 38-138/ 12.03.2024 of the Rector of Sofia University "St. Kl. Ohridski"

Dissertation Topic: *Concept of Practical Skills Formation in Foreign Language Biology Education*

Author of the dissertation: LYUDMILA MARINCHEVA MARINOVA - BOYADJIEVA

Scientific supervisor: Assoc. Prof. Dr. Anelia Kremenska

I. GENERAL DESCRIPTION OF THE SUBMITTED MATERIAL

1. Details of the documents submitted

The applicant has submitted: Dissertation, abstract of the thesis, CV, declaration of originality of the dissertation, diplomas of completion of the Master's degree, orders for enrolment, disenrolment and transformation of the PhD into a part-time, application to the Head of the Department (primary unit, to which the doctoral candidate defends), list of publications on the topic of the dissertation, a statement of compliance with the minimum scientific requirements, a statement of absence of plagiarism with verification in the SU Strike Plagiarism platform, certificate of passing the examinations.

I accept the documents submitted without objection. The documents submitted by the applicant in the defence comply with the requirements of the Law on the Acquisition of Scientific Degrees and Academic Positions at the Sofia University "St. Kliment Ohridski" (RUPASAADSU).

The doctoral dissertation is written in 242 pages, richly illustrated with appendices, and a bibliography of 95 titles in Cyrillic, 140 in Latin and 5 titles in e-resources.

2. Details of the applicant

The candidate has completed three master's degrees - in biology and chemistry at Shumen University, in psychology at Veliko Tarnovo University and a third one at Sofia University for a Master's degree in biology with English. She is currently a part-time PhD student at Sofia University. Her academic development reveals a sustained interest in the issues she addresses in her dissertation. A factor in her success as a researcher is her teaching activity as a teacher at the Profiled High School for Foreign Language Studies in the town of. She has been teaching biology in English since 2014.

3. General description of the candidate's scientific achievements

The dissertation project leaves an overall impression of a serious attempt to conceptualize an experimental model of teaching biology in English at the high school level.

*Conceptualized by adapting a model of content-integrated language learning with the integration of a competency-based approach, a methodological research design was created. This is a major contribution in theoretical and methodological terms.

*Serious theoretical justification of the preferred methodology is expressed; very good knowledge of specialized sources on the researched problem of content-linguistic integrated learning based on the competence approach is evident.

*The concept of teaching biology in English to high school students with its explicit competences is of a portable nature.

*Adequate research instrumentation is constructed, including an ascertaining, instructional experiment, a survey of students' attitudes. A comprehensive cycle of methodological research was carried out, accompanied by statistics appropriate to the specificity of the study.

* A contemporary research approach is applied, looking for a link between scientific, natural and functional literacy, applying the formulations of the prestigious international PISA study.

4. Analysis of the content of the dissertation and the scientific and applied achievements of the candidate

The dissertation text is structured according to the researcher's design in five chapters, accompanied by appendices visualizing the experimental work and a bibliography testifying to a rich awareness of the research problem. In *Chapter One*, "Methodological Framework of the Study," the dissertator demonstrates her heuristic skills to construct the design of her study by clearly delineating the subject, object, research question, aims and objectives, and hypothesis. JI. Boyadjieva displays her expertise in identifying the tools through which to achieve the set objectives. The rich teaching experience helps the PhD Student to construct an experimental

learning activity, original in nature, through which she tests her concept of practical biology skills formed in the course of learning English.

Chapter Two attests to the author's broad bibliographical awareness of the problem under study. In-depth and detailed are explicated the propositions of content- and language-integrated learning, expertly clarified conceptions of the competency approach to learning, as well as the key concept of skills. The emphasis on distance learning in an electronic environment is a contributory point.

The instructional design for practical skills formation in biology is presented in *Chapter Three*. It is key to evaluating the contributions of the peer-reviewed dissertation research. The heuristic skills of L. Marincheva's ability to construct a contemporary design that includes serious experimental activity tracing the overall process of practical skills formation in biology. Technological solutions of high cognitive value for the foreign language learning of high school students of the target group are organically included. Undoubtedly, the practical activity tasks are of the greatest interest, because they reveal the depth of the dissertant's expertise in methodology.

Chapter four is devoted to the results of the study, their analysis and interpretation. The data are adequately visualized. Perhaps most valuable as a contribution is precisely the precise analysis and interpretation of the parameters of the experiments conducted, as well as of the data from the qualitative study applied.

Chapter five summarises the conclusions arising from the research work carried out. They attest to the ability to carry out independent research accompanied by an accurate and adequate explication of the contributions. I accept the contributions presented.

The reference on the minimum scientific requirements proves that the dissertation candidate's application is legitimate. And the verification of the originality of the statement with the platform of Sofia University Strike Plagiarism, is correct.

The publications on the dissertation topic are sufficient and convincing evidence of the dissertant's performance in the field of English biology teaching methodology.

The abstract adequately presents the concept of the dissertation research.

The text is written in precise academic language.

I take this opportunity to express my satisfaction that the final text has taken into account my well-intentioned recommendations during the preliminary discussion.

5. Critical comments and recommendations

I have no critical comments. I strongly recommend that the thesis be published as a book.

6. Conclusion

Having read the submitted dissertation, abstract and other materials, and on the basis of the analysis of their significance and scientific and applied contributions contained therein, I confirm that the scientific achievements meet the requirements of the Law on Research and Development and the Regulations for its application, as well as the Regulations of the University of St. Kliment Ohridski” for the acquisition of the educational and scientific degree „Doctor”. The candidate satisfies the minimum national requirements in the professional field and no plagiarism has been found in the dissertation, abstract and scientific works submitted under the procedure.

I give my *positive assessment* of the dissertation.

II. GENERAL CONCLUSION

On the basis of the above, I recommend the scientific jury to award the educational and scientific degree "PhD" in the professional field 1.3. Pedagogy of Education in ... (Methodology of Education in Biology) to Lyudmila Marincheva Marinova-Boyadjieva.

Date: 13 May 2024

Review prepared by Prof. Tatyana Angelova, PhD