

STATEMENT OF OPINION

by

Professor Rumen Stamatov, DSc, VFU “Chernorizets Hrabar”

On: PhD Thesis for awarding the educational and scientific degree

"Doctor of Philosophy"

field of higher education: 1. Pedagogical Sciences

professional field: 1.3. Pedagogy of training in...

doctoral program: *Methodology of teaching in biology*

Author of the PhD Thesis: Nikola Stefanov Vakrilov

Topic: Debate as a method of teaching biology in secondary school

Research supervisor: Assoc. Dr. Delka Karagyozeva-Dilkova, "Paisii Hilendarski" University of Plovdiv

1. General presentation of the procedure and the doctoral student

By choice of the scientific jury, I have been designated as its member in the procedure for the defense of a PhD Thesis on the topic "Debate as a method of teaching biology in secondary school" for the acquisition of the educational and scientific degree "Doctor of Philosophy" in the field of higher education 1. Pedagogical sciences, professional field 1.3. Pedagogy of teaching in..., program: Methodology of teaching in biology. The author of the thesis is Nikola Stefanov Vakrilov - a doctoral student at the Department of "Botany and Biological Education", at the Faculty of Biology of the "Paisii Hilendarski" University of Plovdiv. The set of materials presented by Nikola Stefanov Vakrilov is on an electronic medium and is in accordance with the requirements of the ADASRB, the Regulations for its application and the Regulations for the development of the academic staff of "Paisii Hilendarski" University of Plovdiv. All the necessary documents have been included. The PhD student has also attached relevant publications.

2. Relevance of the topic

The search for new methods and approaches in the organization of the learning process is of particular relevance, as this is one of the guarantees for effectiveness, productivity and satisfaction from mastering the learning content. In this sense, the presented research finds its relevance in the attempt to outline the effectiveness of debate as a method for mastering the educational content in biology and, together

with that, to seek an answer to the challenges related to the integration of academic abilities and achievements with the satisfaction of learning, developing meta-skills, critical thinking, seeing things from different perspectives and achieving overall subjective well-being.

3. Knowledge of the problem

Nikola Vakrilov tries to reasonably achieve the goal of the thesis research, as well as the pursued tasks with the corresponding methods of theoretical and empirical research. The theoretical analysis is aimed at understanding the main construct - debate and the possibility of it being used as a method in education. The modern approaches and methods of learning are followed, emphasizing the interactive methods and their influence on motivation and the active construction of knowledge and the built-up biological picture of the world. Placed in the space of interactive methods, debate is analyzed from the standpoint of a positive approach, which combines classical perceptions of the development of academic abilities and achievements with modern conceptions of students' development, of their strengths, self-concepts, satisfaction with learning and the opportunity to build teamwork skills. The debate itself is presented meaningfully through various constructs, and together with this, a model of its organization and conduct in the educational activity is proposed. I consider extremely interesting the attempt to make sense of the debate through the influences on the overall development of the personality, well-being and satisfaction from the learning process, as well as providing empirical evidence for the heuristics of interactive approaches.

The theoretical analysis is enriched with the created model for conducting the debates, which outlines the framework of the empirical research and possibilities for verifying the effects of this method on motivation, cognitive abilities, metacognitive abilities and emotional experiences. Following the empirical analyses, I would also like to note the value of many of the findings related to the application of debates as a method for mastering the educational content: presence of increased interest in the method itself, change in motivation, presence of positive experiences in mastering the educational content, tolerance for differences in viewpoints, improvement of communication skills and a deeper understanding of a healthy lifestyle.

4. Research methodology

The methodology of the study is adequate to the design and procedure of the study, which covers two stages: ascertaining and transforming. In this sense, the main

method is the transforming experiment, which has extremely strong capabilities. The basic method is supplemented with diagnostic methods that ensure the assessment of key competences in the field of biology, motivation, interests and communicative abilities.

The created survey opens opportunities to evaluate the effectiveness of using the debate as a method.

Also, the research includes statistical methods for analyzing the obtained results.

5. Characterization and evaluation of the dissertation work and contributions

The dissertation consists of an introduction, three chapters, a conclusion and appendices. Included are 50 figures, 116 tables, 1 diagram and 3 appendices. The volume of the dissertation is 286 pages. 130 sources are cited, of which 108 are in Cyrillic and 22 are in Latin. The research itself is structured in two parts - theoretical, which presents the main concepts around which the research is built, and empirical, which is represented by the goals, tasks, hypotheses, research methods, research procedures and various analyses, in the context of the formulated hypothesis. The achieved results of the pedagogical experiment and their analysis confirm the working hypothesis that the application of the debate as a teaching method increases the students' motivation to learn and contributes to the formation of key competencies in the field of biology education.

The overall analysis of the obtained results shows that the introduction of the debate in education strengthens the interests of students and creates positive experiences related to the mastery of the educational content, helps to develop cognitive and social abilities and increases the motivation to learn.

The research contributions are meaningfully summarized and reflect the actual results.

I would like to note the following contributions:

- The methodology of teaching biology and health education in the 7th, 8th and 9th grades of the secondary school is enriched with a developed methodical model for applying debate in summarizing lessons, through which social abilities, academic abilities, cognitive abilities are formed, ensures in-depth knowledge of the subjects included in the curriculum of biology, as well as on a healthy lifestyle.

- An algorithm for constructing and holding a debate in general biology lessons in the 7th, 8th and 9th grades is described.

- A methodical model for summative lessons with the application of debate as a teaching method was approved, which leads both to a change in the students' attitudes towards learning and the learning environment.

- A diagnostic toolkit was constructed for evaluating the results of holding debates in biology and health education.

- The developed methodological model for implementing debate in general lessons can be used in practice by teachers who teach biology and health education in the 7th, 8th and 9th grades of secondary school.

6. Evaluation of the publications and personal contribution of the doctoral student

The presented publications are 7 in number and are entirely on the topic of the thesis. No plagiarism data.

7. Abstract

The abstract contains the main statements in the dissertation work, the results and their analysis. I believe that it is adequate to the thesis and objectively reflects the theoretical analyzes and the main results presented in the content of the research.

8. Recommendations for future use of dissertation contributions and results

I would venture to make the following recommendations. The research should be expanded by introducing additional constructs – such as attitudes of mind in the context of K. Dweck's theory, internal motivation and flow presented in the concepts of Ed. Desi and R. Ryan and M. Csikszentmihalyi, respectively.

CONCLUSION

The thesis shows that the doctoral student Nikola Stefanov Vakrilov has in-depth knowledge of the subject of the thesis. I believe that the candidate meets the conditions and procedures for awarding the educational and scientific degree "Doctor of Philosophy" according to the Act on the Development of the Academic Staff in the Republic of Bulgaria, RIADASRB, the Regulations for the Development of the Academic Staff of "Paisii Hilendarski" University of Plovdiv. After the advanced arguments, as well as the overall positive assessment of the completed thesis research, I propose to the scientific jury to vote positively and award the educational and scientific degree "Doctor of Philosophy" to Nikola Stefanov Vakrilov, for which I also give my affirmative vote.

16.08.2022

Professor Rumen Stamatov, DSc

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