

STANDPOINT

for the application of Assoc. Prof. Dr. Zhelyazka Dimitrova Raykova,
the only candidate for the professor competition,
announced by the University of Plovdiv "P. Hilendararski "
according to Professional area 1.3. Pedagogy of training in ...,
specialty « Didactics of Physics»
by Prof. Diana Petrova Kurkchieva, PhD,
University of Shumen "Ep. K. Preslavski "

Zhelyazka Dimitrova Raykova graduated with a Master's Degree in Physics and Physics teacher in 1985 at the Faculty of Physics from the University of Plovdiv. Since 1989 she has been working at the University of Plovdiv "Paisii Hilendarski ".

In 2000 she defended her doctoral dissertation on "Research on the possibility of upgrading the knowledge of electromagnetic phenomena from the compulsory minimum in secondary school". Since 2008 she has been an associate professor at the University of Plovdiv.

Assessment of the applicant's research results

Assoc. Prof. Dr. J. Raykova has presented 55 works, of which 1 monograph, 17 articles in journals, 2 articles in scientific forums, 4 study aids and 4 books related to the results of scientific research. In 13 publications she is the sole author.

Part of the research activity has been implemented in the framework of 12 projects, with 6 of them candidate has being the project manager.

So far, 24 citations of works by Assoc. Prof. Dr. Raykova have been noted.

All the works submitted for the competition are in the field of physics education in different educational levels and stages in secondary school. The main contributions of the candidate are to enrich the theory and practice of the Methodology of teaching physics in different directions.

1. The theory of the organization of physics education is enriched through some contemporary approaches in physics education related to constructivism, active learning and the formation of procedural skills. Guidelines are proposed for applying some of the new global trends in teaching practice by adapting them to the conditions of Bulgarian education.

2. The possibilities of the experimental activity in studying the physical module of the subject "Man and nature" as an important factor for the formation of scientific literacy are analyzed.

3. The theory of the methodology of teaching physics is enriched, with emphasis on the possibilities of the research approach for building motivation for the study of natural sciences and for the study of specific topics of the educational content in physics for all stages of high school, physical module in the 5th and 6th grade of the subject "Man and nature".

4. Innovations have been developed to update the targeted and motivational aspects of the teaching methodology in physics, representing changes in society, social communication and new technologies. The candidate participates in an international study of the ICT problem in physics education. An international training course for enhancing the information skills of science teachers has been created and conducted.

5. Research has been conducted on the didactic capabilities of "augmented reality" technology with mobile devices in the acquisition of natural science knowledge in the Bulgarian school. The conditions of how this technology, combined with mobile devices, can be applied in primary school, in lessons for new knowledge in physics, for solving physical experimental problems, for generating test items to evaluate students' achievement in learning topics for mechanical vibrations.

6. An analysis was made of the State Educational Standards (DOS / DOS) for the educational content and of the curriculum in physics and astronomy for secondary school in relation to science literacy, the study of certain topics and in relation to the study of physics in vocational schools. Based on the analysis of the research results, suggestions for improvements and changes in the State educational requirements and in the curricula have been made.

7. The methodology of teaching physics and astronomy on specific topics of the educational content (transformers, atomic nucleus, mechanics, elementary particles) is improved and enriched, suggesting methodological guidelines for more effective study and overcoming of some difficulties.

8. The place, role and importance of the integral approach in the study of physics and astronomy and the possibility of forming an ecological culture in the lessons of physics have been investigated.

Assessment of the applicant's educational and teaching activities

Assoc. Prof. Zh. Raykova actively participates in the training of students from different specialties of the University of Plovdiv:

- She developed educational and examination materials as well as curricula for 15 teaching courses;

- She has set up electronic courses in the subjects that prepare future teachers in physics and engineering;
- She has written the following 3 teaching aids (Training manuals on 2-volume physical problem solving and a Guide to conduct home-based experiments)
- She has prepared a curriculum and didactic materials on AVITO (Audiovisual and Information Technology of Training) and on ICT in training and work in digital environment. For this purpose, she is certified as a Google Trainer (Level 1);
- She conducts training in the disciplines “Didactic of Physics”, “Methodology of teaching in physics problem solving”, "Presentation and communication skills of the teacher", "Constructivist approach in teaching science", "Methodology and methodology of pedagogical research", "Methodology and methodology for the preparation of diploma work and work with scientific and technical literature ", " Physics for Kids "and "Astronomy for Kids "

Assoc. Prof. Dr. Raykova has participated as a trainer in international training (2010 at the University of Patras), 3 national trainings with teachers from the country (under the Chain Reaction project) and in more than 10 trainings of physics teachers from Plovdiv and the area. She is currently participating in teacher training at the Department for Qualification and Professional Development of Pedagogical Specialists at the University of Plovdiv. She has developed and directed 3 training courses and co-authored 2 training courses.

My personal impression from Assoc. Prof. Dr. Raykova is that she is an erudite and in-depth researcher and a desirable partner in various scientific teams at home and abroad

Conclusion

On the basis of the above, I believe that the quantity and quality of the research and teaching activity of Assoc. Prof. Dr. Zhelyazka Dimitrova Raykova completely satisfies the requirements in order to occupy the academic position of "Professor" of the Law on the Development of Academic Staff in the Republic of Bulgaria, RULES for the implementation of the Law for the development of the academic staff in the Republic of Bulgaria, as well as the Specific additional requirements of the PS.

19.08.2019 г.

Signature: