



## REVIEW

From: Professor D.Sc. Kiril Petrov Angelov;  
Technical University - Sofia, Faculty of Economics, Department of Management and Business Information Systems  
Field of higher education: 3. "Social, economic and legal sciences", Professional field: 3.7. "Administration and Management"  
Scientific specialties: Economics and Management, Organization and Management of Production and Organization and Management outside the field of material production

Subject: scientific papers submitted in the competition for the academic position of "professor" in the field of higher education 3. "Social, economic and legal sciences", professional field - 3.7 "Administration and management", scientific specialty "Application of computer technology in Economics", in the discipline "Information Technologies", published in the State Gazette no. 101 / 27.12.2019

of the candidate: Assoc. Prof. Dr. Marina Petrova Mladenova, University of Forestry, Faculty of Business Administration, Department of Computer Systems and Informatics

Grounds for submitting a review: participation in the composition of the scientific jury: Order of the Rector of the University of Forestry № ZPS-67 / 17.02.2020, with procedure code ABM-P-1119-27

### **1. General characteristics of the works accepted for review in the competition**

The only candidate for the academic position in this competition is Marina Petrova Mladenova, PhD, who is an associate professor at the University of Forestry. The scientific papers were submitted within the legal deadline, meet the requirements of the University of Forestry and the relevant legislation at the time of starting the procedure. The candidate is admitted to participate in the competition. The candidate is the author of 2 monographs, 2 pcs. studies, 3 textbooks (2 independent) and 5 textbooks (3 independent), 10 scientific articles and 9 scientific reports published in edited collective volumes.

The total number of works submitted by the candidate, with which he appears in the competition is 31, of which:

- author's - 12 pcs. and in co-authorship - 19 pieces;
- in Bulgarian - 19 pcs. and in a foreign language 12 pcs. (in English).
- works published in the country - 25 pcs. (Monographs - 2; 2 studies, textbooks and teaching aids - 8; Scientific publications in journals and edited collective volumes: articles and reports - 13);
- works published abroad - 6 pcs. scientific reports presented at international scientific forums.

The author has also enclosed a book published on the basis of a defended dissertation, which I accept for information and do not review because it refers to a past procedure.

For co-authored publications, the division of contributions between co-authors is clear.

The competition also presents a number of reports on the scientific and academic activity of the candidate, which I take for information and serve for my overall assessment as a reviewer.

## **2. General characteristics of the research, applied and pedagogical activity of the candidate**

The submitted works for review are in the field and issues of the specialty of the competition for "professor", namely in the field of higher education -3. "Social, economic and legal sciences", professional field - 3.7. "Administration and management" in the scientific specialty "Application of computer technology in economics". The candidate examines various aspects of the application of information and communication technologies in business and education in the context of the search for efficiency and effectiveness in the digital transformation of operational processes.

The overall development of the candidate is related to the study of various technical and managerial aspects of the professional field - 3.7. "Administration and Management": The dissertation for the acquisition of ONS "Doctor" is on the topic: "Research and results of the use of information technology in the management of the furniture industry". at the University of Forestry in the same professional field in the scientific specialty "Application of computer technology in economics (information technology)", conducting classes in the disciplines that present the possibilities of the format in the economic activity.

Assoc. Prof. Dr. Marina Petrova Mladenova is a researcher closely associated with the practice of digital transformation of education. It is not surprising that the candidate has been the leader of 2 research projects and has actively participated in other 7. All of them are in the field of professional development of the candidate and demonstrate a good relationship: theoretical training - research - practical development - learning process. In this regard, her scientific research has the character of application of existing methods for solving specific problems with formulated conclusions and recommendations for practice.

## **3. Assessment of the pedagogical preparation and activity of the candidate**

Assoc. Prof. Dr. Marina Petrova Mladenova in this competition presents 3 textbooks (2 independent) and 5 textbooks (3 independent). Characteristic of these publications is that they are developed on the basis of the candidate's scientific research. They are directly related to the areas in which the candidate conducts training.

There are two especially important characteristics of the lectures given by Assoc. Prof. Mladenova:

- digitalization of the learning process;
- opportunities for teaching in Bulgarian and English.

These two characteristics are especially valuable on the one hand in connection with the constantly growing process of digitalization, and on the other - with the demographic decline, which further motivates Bulgarian universities to present foreign language programs. I will briefly dwell on these characteristics of the candidate.

The digitalization of the learning process that the candidate carries out is impressive. It has all the technical and methodological competence not only to carry out Internet-based training, but also to manage the processes of its construction and maintenance. The latter

statement is found not only in the demonstrated experience of the candidate, but also in the digital learning materials developed by him, his participation in digitization projects and certifications received in this regard.

Assoc. Prof. Mladenova has the competence to give lectures in a foreign language. This is established not only by the established practice, but also by the developed textbook in English for foreign students majoring in veterinary medicine.

All the above unequivocally characterizes the degree of pedagogical training and the scale of teaching activity of Assoc. Prof. Dr. Marina Petrova Mladenova.

#### **4. Main scientific results and contributions**

The works presented in the competition can be grouped in the following four separate thematic areas:

- 4.1. Establishing the impact of the digital transformation on the labor market;
- 4.2. Management of operational processes in universities in the conditions of digital transformation;
- 4.3. Management of the digital transformation of the educational process;

In my opinion, in the works presented by Assoc. Prof. Dr. Marina Petrova Mladenova on the competition, the main scientific and scientific-applied contributions can be grouped as follows:

- application of existing methods for solving specific problems with formulated conclusions and recommendations for practice.

Main scientific contributions:

1. Based on a theoretical study of the scientific literature and systematization of opinions, the main influences of the digital transformation on the labor market are derived. The characteristics of the requirements that these influences set in different industries and professions are highlighted. The influence of soft skills in the conditions of digital transformation has been established. (№ B3-1)
2. A comprehensive theoretical study of the development of the concept of digital competence has been carried out, establishing the main characteristics during the different periods of development. Bulgaria's place in the context of the development of digital competencies, economy and market compared to other countries in the EU and around the world has been determined. (№ G5-1)
3. Based on an analysis of the characteristics of rating systems, their strengths and weaknesses are identified. An approach for digitalization of basic indicators of rating systems, applicable in higher education, has been created. (№ G7-1, G8-2, G8-6, G8-14, G9-2, E16-4)

Main scientific and applied contributions:

1. The educational requirements for some of the most promising professions and positions in the conditions of digital transformation have been established. The current state of the labor market related to the new jobs, which appeared as a result of the rapid development of ICT, in our country, in the EU and worldwide, is considered and analyzed. (№ B3-1)
2. The place of Bulgaria in the context of the development of digital competencies, economy and market compared to other countries in the EU and around the world is presented and analyzed. (№ G5-1, G8-7)

3. Methodological tools have been developed and research has been carried out, through a survey, for monitoring, maintenance and sustainable development of the indicators of the rating system for higher education institutions in Bulgaria through the use of the Alumni system of the University of Forestry. Measures and initiatives have been proposed to ensure sustainability and improve the results of LTU. The results obtained in this way were used in the accreditation of the specialties in FSU. (№ G7-1, G8-2, G8-6, G8-14, G9-2, E16-4)
4. The characteristics, the current state, the perspectives, the possibilities, the risks, the advantages and the disadvantages of the use of the cloud computing are analyzed and systematized, from the point of view of the management paradigm for trinity of the economic, social and ecological aspects. (№ G9-1)
5. Research and analysis have been carried out and the necessary soft skills have been outlined, which are becoming more and more sought after today, sometimes even predominantly over technical skills, for new jobs. (№ B3-1)
6. The concept to be met by a virtual laboratory for mathematical modeling and computer simulations in research and training in the field of biological resources, product modeling, interior space and exterior environment is presented. (№ G8-1, G8-4, G8-8, G8-10, G8-11, E16-2, E18-1, E18-2)

**Main application contributions:**

1. The results and the impact of the use of the electronic platform Blackboard Learn on the quality of the educational process at the University of Forestry are evaluated. The obtained questionnaire results prove its strong influence on the quality of the educational process in LTU in a positive direction. (№ G8-13, G8-15, G8-17)
2. The tools and procedures for building in the University of Forestry a system for monitoring the indicators of the rating system of higher schools, developed and maintained by the Ministry of Education and Science, by surveying the stakeholders through the system "Alumni Network" of the University of Forestry . (№ G7-1, G8-2, G8-6, G8-14, G9-2, E16-4)
3. A questionnaire "Working with the system" has been developed and applied (in the Blackboard Learn platform of the University of Forestry), for feedback with the learners, for assessment of the influence of the learner-interface interaction in web-based learning on the achieved result. (№ G7-2, G8-3, G8-5, G8-12, G8-16)
4. A Balanced map for economization and evaluation of the effectiveness of the activities inherent in the University of Forestry - Sofia has been tested, and concrete positive results have been achieved, proving its applicability in real conditions. . (№ G8-9, E16-4)
5. A virtual laboratory for mathematical modeling and computer simulations in research and training in the field of biological resources, product modeling, interior space and exterior environment has been created and developed. (№ G8-1, G8-4, G8-8, G8-10, G8-11, E16-2, E18-1, E18-2)
6. Developed and applied in the training are available online, in the Blackboard Learn platform of the University of Forestry, interactive textbooks, teaching aids and electronic courses using the capabilities of modern information and communication technologies. They help to overcome the challenges associated with the search for higher and new digital skills both in the labor market and in everyday life (№ E20-1, E20-2, E20-3, E21-1, E21-2 , E21-3, E21-4, E21-5, E16-1, E16-3, E16-5, E16-6, E16-7, E18-2)

7. An online survey "Quality of learning resources" has been developed (in the Blackboard Learn platform of the University of Forestry), for feedback with students. This guarantees the offer of quality educational resources, corresponding to the modern educational tendencies and the current demand in the specific subject area. (№ E20-1, E20-2, E20-3, E21-1, E21-4, E21-5)

8. A methodology for complex assessment of students in each course has been developed, with introduction of weighting coefficients for each of the set tasks (tests and course tasks for the separate sections of each of the considered subject areas, joint work - discussions and creation of wiki pages). (№ E20-1, E20-2, E20-3, E21-1, E21-4, E21-5)

9. Developed and applied in the training is a unified structure for online courses implemented in the Blackboard Learn platform of the University of Forestry, using the functional capabilities of the system for implementation of modern information and communication technologies in the training. (№ E20-1, E20-2, E20-3, E21-1, E21-4, E21-5)

#### **5. Assessment of the significance of the contributions for science and practice.**

The presented reference with scientometric data of the candidate highlights the importance of the contributions from the research activity of Assoc. Prof. Dr. Marina Petrova Mladenova. The scientometric requirements for the reference of his works by other scientists fully meet the requirements of the University of Forestry and the relevant legislation at the time of the procedure. The candidate has been cited more than 34 times. Due to imperfections in the law (in my opinion) some of these citations for the purposes of this procedure cannot be taken into account due to the fact that they are made in dissertations and / or are textbooks and teaching aids. I consider the latter to be extremely unfair to the scientists in Bulgaria, but we are obliged to comply with the Law on the Protection of Human Rights and Fundamental Freedoms. However, the applicant has more than the necessary points to exceed the minimum requirements in this area. For me, this is just another example of how the production of a recognizable scientist has been unfairly neglected by the ZRASRB.

#### **6. Assessment of the extent to which the contributions are the work of the applicant.**

These contributions are the personal work of the applicant. The authorship of the candidate is clearly distinguished in the collective scientific works. There is no difference between the way, the approach and the analysis, which is done in the monographs and in the presented scientific articles. This gives me reason to assume that Assoc. Prof. Dr. Marina Petrova Mladenova presents original scientific papers that are her personal work.

#### **7. Critical notes on peer-reviewed papers**

The candidate is an established scientist and lecturer, holding the academic position of "Associate Professor" in the professional field 3.7. "Administration and Management", presenting works in this competition, which clearly highlight good theoretical training and professionalism in teaching. This gives me reason to make specific recommendations in order to deepen the achievements so far and the future scientific growth of Assoc. Prof. Dr. Marina Petrova Mladenova.

7.1. I believe that the scientific field in which the candidate works is developing dynamically and is followed with great interest, which is a prerequisite for publishing the

results of the candidate's scientific research in magazines of class A, with impact factor and impact rank. Implementation of this recommendation would significantly increase the visibility of the author's scientific views, including those that can be identified through the metrics of these journals.

7.2 I believe that in the works of Assoc. Prof. Mladenova there is no examined the limit to the effectiveness of digitalization of the learning process. Undoubtedly, such a limit exists and it is based on different criteria, reaching a potential optimum under different conditions. I recommend the candidate to start solving this not only significant, but also current problem.

7.3 I find it necessary to recommend to the candidate to carry out research in international research teams, which to summarize scientific knowledge in the specific scientific problem of managing the digital transformation in education.

7.4. I believe that textbooks and teaching aids can be presented in a more accessible way for students, through various forms of digital presentation, without losing their educational significance.

## **8. Personal impressions and other issues on which the reviewer considers that he should take a stand**

I do not know the candidate personally. All my findings are based on the materials received in the competition. From respected colleagues I have heard flattering reviews about the educational and scientific activities of the candidate.

## **9. Conclusion**

After getting acquainted with the materials and scientific works presented in the competition, analysis of their research value, I found original and current scientific, scientific-applied and applied achievements, mainly related to establishing the impact of digital transformation on the labor market and the application of information and communication technologies. for digitization of various operational processes. The candidate - Assoc. Prof. Dr. Marina Petrova Mladenova has the necessary qualification and professional training and meets the requirements for the academic position of professor and the relevant legislation at the time of starting the procedure.

## **10. Assessment of the candidate.**

The above arguments are my reasons to give my positive assessment and to recommend to the Scientific Jury to propose to the Scientific Faculty Council of the Faculty of Business Administration of the University of Forestry to choose Assoc. Prof. Marina Petrova Mladenova to take the academic position "Professor "in the field of higher education - 3.“ Social, economic and legal sciences”, professional field - 3.7. "Administration and management" in "Application of computer technology in economics" (discipline "Information Technology").

Date 07.05.2020, Sofia

Signature: .....  
/ prof. Ph.D. K. Angelov /