REVIEW

of Associate Professor Todorka Zhivkova Terzieva, PhD

on a competition for holding the academic position of **"Professor"** in a professional field

1.3 Pedagogy of teaching (Methodology of teaching in informatics and information technology)

Reviewer: Acad. Ivan P. Popchev – BAS

By order No. R_{33} - 637 Plovdiv, 19.02.12021 of the Rector of the Plovdiv University "Paisii Hilendarski" Prof. Rumen Mladenov, PhD in connection with the announced competition for the academic position **"Professor"** in SG No. 99/20.11.2020 in the field of higher education 1. Pedagogical sciences; professional field 1.3. Pedagogy of training (Methodology of teaching in informatics and information technologies) and report by Prof. Angel Atanasov Golev, PhD - Dean of the Faculty of Mathematics and Informatics I have been appointed an internal member of the Plovdiv University by a Scientific Panel, approved by a decision of FC of the Faculty of Mathematics and Informatics, protocol No. 14/17.02.2021.

As a reviewer, I have received all the documents submitted for participation in the competition.

According to ADASRB, Regulation for application of ADASRB (Decree № 26 of 13 February 2019) and Additional requirements for the academic position of **"professor"** of the Faculty of Mathematics and Informatics (FMI), the candidates for professors must meet certain conditions.

Art. 29(1) Candidates to take academic position "Professor" shall meet the following conditions:

1. To have acquired the educational and scientific degree of Doctor ...;
2. To have occupied the academic position of Associate Professor in the same or in another higher school or scientific organization for not less than two academic years ...;
3. To have presented a published monograph or equivalent publications in specialized scientific issued or evidences of equivalent to them artistic and creative

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achievements in the field of arts, which do not reproduce those presented for awarding the educational and scientific degree of Doctor and for awarding of the scientific degree of Doctor of Science and for occupying the academic position of Associate Professor;

4. To have presented other original scientific-research works, publications, inventions, and other scientific and scientific-applicable works or artistic creative achievements, to be assessed together;

5. To meet the minimum national requirements and the requirements under Art. 2b, Para. 2 and 3, respectively to the requirements under Art. 2b, Para. 5;

6. To have no plagiarism proven as per the legally established order in the scientific works.

(3) The candidates shall submit a reference on the fulfillment of the minimum national requirements under Art. 2b, Para. 2 and 3, respectively the requirements under Art. 2b, Para. 5, and a reference of the original scientific contributions to which shall be attached the relevant evidence laid down in this Act, in the Regulations for its implementation and the regulations of the higher schools and of the scientific organizations.

Assoc. Prof. T. Terzieva, PhD **meets the conditions of Art. 29 (1).1** as she presented the Diploma for the educational and scientific degree "Doctor" № 1000033, 23 May 2012.

Assoc. Prof. T. Terzieva, PhD **meets the conditions of Art. 29 (1).2** as the academic position of associate professor is occupied by a decision of the faculty council of the Faculty of Mathematics and Informatics, protocol No. 46/7 October 2015 and Order of the Rector No. P34-463/15 October 2015.

Assoc. Prof. T. Terzieva, PhD **meets the conditions of Art. 29 (1).3** because she presented a published monograph "Educational means for teaching in a digital environment ", University Publishing House "Paisii Hilendarski", Plovdiv, pp. 139, 2021, ISBN 978-619-202-631-8.

Assoc. Prof. T. Terzieva, PhD has a **complete list of 98 publications, of which 44 participated in the competition**.

The analysis of these publications on the competition showed the following:

- 5 publications are **in journals with SJR** (Nos. 23, 27, 30, 33 and 35);
- 15 publications are in journals (Nos. 4, 5, 10, 11, 22, 25, 26, 28, 29, 32, 34, 36, 37, 38 and 44);

- 21 publications are in conference proceedings (Nos. 6, 7, 8, 9, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 24, 31, 39, 40, 41, 42 and 43);

- 1 publication **is a monograph** (No. 1);

- 1 publication is a book (No. 2);

- 4 publications are **independent** (NNo. 1, 2, 3 and 44);

- 1 publication is a textbook (No. 3);

- 1 publication is in press (No. 44);

- 15 publications are in Bulgarian.

The presented **"List of noticed citations"** includes a total of **110 citations**.

Assoc. Prof. T. Terzieva, PhD meets the conditions of:

- **Art. 29 (1).4** as she has presented other original research papers, publications, … and other scientific and applied research works - participation in 6 international and 7 national projects and is the leader of 2 projects, as well as participation in 11 projects of PU "Paisii Hilendarski", including a project manager of 1;

- **Art. 29 (1).5** as she meets the minimum national requirements under Art. 26, para. 2 and 3, the requirements under Art. 26, para. 5 as well. A reference for fulfillment of the minimum national requirements with number of points 1442 is presented;

- **Art. 29 (1).5** as there is no legally proven plagiarism in scientific works.

According to Art. 29 (3) the candidates shall submit a **"Reference for the original scientific contributions"**. Assoc. Prof. T. Terzieva, PhD has also presented "Author's report on scientific contributions… in a volume of 7 pages in 6 thematic areas", which is not according to Art. 29 (3).

Briefly **the contributions** can be summarized as follows:

1. There are proposed technological, didactic and methodological models for teaching in a digital environment [NNo. 1, 2, 4, 5, 18, 21, 23, 25, 28 and 40].

2. There are created a technological model and methodology for adaptive e-learning and a model for developing adaptive learning content [NNo. 1, 10, 12, 16, 17, 20, 22, 24, 25, 31 and 36].

3. It is developed a didactic model based on Bloom's expanded taxonomy for the implementation of developmental training in informatics [No. 2].

4. There are proposed didactic means for increasing the motivation in the teaching of mathematics, informatics and information [NNo. 1, 11, 13 and 26].
5. There are conducted analytical studies on the spread of computer viruses [NNo. 27, 29, 30, 32, 33, 34, 35 and 37].

There are presented **"Documents for educational work"** with **three** references:
- curricular and extracurricular employment;
- published textbooks and teaching aids;
- activity with students and PhD students.

The references were prepared by Assoc. Prof. T. Terzieva, PhD and signed by Assoc. Prof. T. Terzieva, PhD - Head of Department and Prof. Angel Golev, PhD - Dean of the Faculty of Mathematics and Informatics. Briefly in these reports it is noted that Assoc. Prof. T. Terzieva, PhD has led exercises in 11 disciplines and lectures in 6 disciplines in bachelor programs and 3 disciplines and exercises in master's programs, has participated in the development and periodic updating of 10 disciplines curricula at FMI, is a member of State commissions for exams and defense of diploma theses and organizational, technical and program committees of 9 national scientific conferences, has published 3 paper textbooks and textbooks and 13 electronic media textbooks, has participated in the practical training of 45 students as an academic mentor, student project manager, has more than 20 defended graduates and is a reviewer of more than 40 diploma theses, has two defended doctoral students (one in defense, five are deduced with the right to defend) and is currently the supervisor of 6 PhD students in 1.3 and 4.6.

Accordingly, there are presented **"Research Documents"** with **four** references:
- scientific research activity;
- participation with conference papers in international and national scientific forums;
- participation in research and educational projects;
- membership in professional organizations.

The four references were prepared by Assoc. Prof. T. Terzieva, PhD and signed by Assoc. Prof. T. Terzieva, PhD - Head of Department and Prof. Angel Golev, PhD - Dean of the

Faculty of Mathematics and Informatics. For Assoc. Prof. Dr. T. Terzieva in references are recorded participations in 30 international and national scientific conferences and seminars with reports, participations in 16 national and university projects, incl. 8 projects as project manager, participation in 4 international projects.

Assoc. Prof. T. Terzieva, PhD is a member of the Union of Mathematicians in Bulgaria. There are included Two official notes:

- ex. No. NPD 117/09.02.2021 for participation in 15 projects, incl. 2 projects as a project manager;
- for participation as an academic mentor in the project "Student Internships", signed on 10.02.2021 by Prof. Dora Lefterova, DC - Leading Functional Expert.

Assoc. Prof. T. Terzieva, PhD is a member of the Administrative board of the National Scientific Program Information and Communication Technologies in Science, Education and Security (ICT in SES), funded by the Ministry of Education and Science (2018 - 2021).

As a generalized "**scientometric image**" of Assoc. Prof. Todorka Terzieva, PhD the world's scientific databases show the following:

- Scopus: 7 documents, 6 citations, h-index 1;

- Web of Science: 5 total publications, 2 citations, h-index 1;

- Scholar.google: 30 references, h-index 10, i10-index 10;

- Research Gate: RG Score 12.23.

The elements of a "**scientometric image**" show a successful and productive research activity. They should be subject to mandatory self-analysis, new research guidelines and further independent publication in IF journals.

As a reviewer, I am convinced in the qualities of Assoc. Prof. T. Terzieva, PhD for development of modern digital environment models of education by searching of strategies for new quality of education as well as in her ability to present a research for **"Doctor of Science"**, containing theoretical summaries and solutions of major scientific and applied problems, which correspond to modern achievements and represent a significant and original contribution to science.

CONCLUSION

All conditions according to ADASRB, Regulations for application of ADASRB and the Additional requirements for the academic position "Professor" of the Faculty of Mathematics and Informatics (FMI) are met and I give a definite **positive** conclusion for the election of Assoc. Prof. Todorka Terzieva, PhD in a competition for the academic position "Professor" in professional field 1.3 Pedagogy of teaching (Methodology of teaching in informatics and information technology).

I propose that the Scientific Jury unanimously vote on a proposal to the Faculty of Mathematics and Informatics to elect Assoc. Prof. Dr. Todorka Terzieva for the academic position of "Professor" in professional field 1.3 Pedagogy of teaching (Methodology of teaching in informatics and information technology).

15.03.2021 г.

Reviewer: …………………………………

Akad. Ivan Popchev