

REVIEW

from ass. prof. Dimitar Vladislavov Atanasov, PhD
dep. Informatics, New Bulgarian University,
4.5 Mathematics

on scientific works in relation with competition for the academic position of “**professor**”,
professional direction 4.6. Informatics and Computer Science,
published in ДБ 65/12.08.2022
with a candidate **Velina Slavova, PhD.**

I. Assessment of compliance with the minimum national requirements and the requirements of the New Bulgarian University

Assoc. prof. Velina Slavova has fulfilled the minimum national requirements for scientific, teaching for Higher Education Area 4. Natural Sciences, Mathematics and Informatics, Professional Direction: 4.6. "Informatics and Computer Sciences", defined by the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria, as well as the requirements of the Ordinance on the Development of the Academic Staff of the NBU and Appendix 2. Minimum national requirements and requirements of the NBU, which must be met candidates for obtaining a scientific degree and for occupying the academic position of "professor" shall be responsible.

In the table below, the corresponding number of points is marked according to the minimum requirements of NBU.

Group	Requirements	Recognized
А	50	50
Б	0	-
В	100	100
Г	200	228
Д	100	104
Е	150	190
Ж	70	135
З	70	70
И	70	100
Й		
1		

Group A: 50 points

Associate Professor Dr. Velina Slavova has a PhD candidate in technical sciences, awarded in 1989 based on a dissertation in the field of mathematical modeling of mechanical structures.

Group B: 100 points

As a habilitation thesis, Associate Professor Dr. Velina Slavova presents the monograph

"Language, concept formation and child language acquisition - an information modeling approach", Professor Marin Drinov Academic Publishing House of the Bulgarian Academy of Sciences, Sofia • 2022, ISBN–978–619–245–221–6.

Four scientific reviews are presented, showing the qualities of the presented monograph.

Group Г: 218 points

Associate Professor Dr. Velina Slavova has provided information on 8 publications (Г7). All publications are indexed in Scopus and Web of Science valid for area 4.6. When evaluating, a correction factor of 3, valid for area 4.6, was applied.

Group Д: 104 points

11. Citations in scientific publications, monographs, collective volumes and patents, referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus)*

Assoc. Dr. Velina Slavova presents 15 citations of 8 publications with her participation. According to the criteria for professional field 4.6 Informatics and computer science, they collect 104 points.

Group E: 190 points

Based on the evidence presented by Assoc. Dr. V. Slavova, 190 points were accumulated according to the criteria in the group of indicators E.

The applicant declares participation in the following projects

1. International educational project MASTER–FOAD “Virtual University of Pays de la Loire
2. Projet EU-FP7 Aliz-e in collaboration with Vrije Universiteit Brussel
3. External expert in cooperation with Vrije Universiteit Brussel VUB, ETRO in the Aliz-E project for scientific developments under the 7th EU program for creating artificial intelligence tools
4. International educational project ERASMUS-PROG1-85427I-C-1-2000-1BG-ERASMUS-PROG1. Original Program in Computer Linguistics, New Bulgarian University (coordinator),

University of Nantes and Vrije Unibrsiteit Brussels, for a joint Master's program in Computational Linguistics

Three textbooks are presented that are used in the school network, two of which are co-authored.

Group Ж: 135 points

21. Availability of a research or creative program

Since acquiring the academic position "Associate Professor - VAC" in 2003, Associate Professor V. Slavova has published 50 articles in the field of cognitive process modeling. More than 50 citations are known, including 24 articles in scientific journals, 9 conference reports, 2 patents, 3 books and 3 doctoral dissertations defended in foreign universities.

22. Membership in national and/or international organizations and associations in the relevant professional direction

She is a member of the Regional Committee of Experts of the Francophone University Agency AUF

24. Participation in research or creative projects beyond those specified in indicators 15 and 16

Co-chair conference on Cognitive Modeling in Linguistics. The project is with the ETRO laboratory on Artificial Intelligence of the Vrije Universiteit Brussel

26. Participation in the board/management council of national and/or international organizations and associations in the relevant professional direction

Member of the Scientific Council of the Francophone University Agency AUF as a country representative, two terms, in the period 2001–2006

28. Conducted public lectures on behalf of the NBU at the invitation of VU or prestigious national/international organizations (or at the invitation of the NBU - for external candidates)

Lecture on "Cognitive Science and Automatic Language Processing" at the "Showcase Forum on the Computerization of Languages" held in Montreal, organized by the Intergovernmental Agency of La Francophonie.

29. Initiation/active participation in the creation of a successfully launched new program

Active participation in the development of practically all programs of the department since its foundation.

30. Participation in program improvement and development of courses to programs

Active participation in the development of practically all programs of the department since its foundation. The lecture courses are accompanied by texts, author's animations, author's video presentations and carefully compiled sets of author's tasks and assignments for independent preparation for each topic.

31. Organization and conduct of a scientific school, university-wide scientific seminar, scientific conference

Cognitive Modeling in Linguistics at NBU <http://www.cml.msisa.ru/>

33. Proven professional applied skills in the relevant scientific field and professional direction
From 2015 until now, he is co-chairman of the program board of the international conference on cognitive modeling in linguistics (Cognitive modeling in linguistics - CML)

He gave a lecture on "Cognitive Science and Automatic Language Processing" at the "Showcase Forum on Computerization of Languages" held in Montreal, organized by the Intergovernmental Agency of La Francophonie.

Group 3: 70 points

35. Author's study materials for at least one course in book form and/or in "Moodle NBU".

Prof. Dr. Slavova has created original teaching materials in many disciplines, which she has led over the years. Some of the current courses are:

- CSCB214 Introduction to Algorithms and Programming,
- CSCB323 Data Structures,
- CSCB326 Data Structures Lab,
- CSCB536 Relational Database Modeling and Implementation
- CSCB817 Natural Language Processing.

36. Collaborative work with students in research and/or creative collectives

Prof. Dr. Slavova works with student teams on the topic of recognizing emotions in text within the framework of "Practice in Programming and Internet Technologies" and "Practice in Programming and Database Implementation". As a result of the research, scientific articles were published containing thanks to the students participating in the developments within the practice at the NBU.

37. Guidance/reviews of successfully defended graduates or participation in state examination committees

Participation in state examination committees. Guide of successfully defended diploma graduates (by reference from an e-teacher – 10 reviews and 10 theses).

40. Foreign language teaching

NFD002 Natural Language Processing.

Group II: 100 points

43. Fulfilling academic obligations

She fulfills her academic obligations, regularly participate in departmental councils and keeps her appointment time.

44. Participation/management of a project for which external funds and/or NBU students have been attracted

Coordinates the Erasmus program at Dept. "Informatics".

Participation in the project COBBALT (Cooperation Ouest BALkans BALtique en Télécommunications), led by the Polytechnic Faculty of the University of Nantes with the international partners: New Bulgarian University, the Polytechnic University of Timisoara and the Demokritos Research Center in Athens

45. Participation in committees at the faculties

Participates in commissions at the Faculty of Arts and the Ministry of Education for the defense of bachelor's and master's theses

46. Participation in Program Council, Faculty Council and/or Academic Council

Member of the Program Board of the bachelor's program in Informatics. Long-time member of the faculty council of the Faculty of Economics. Former member of the NBU Academic Council.

48. There are no LC penalties

II. Research (creative) activity and results

1. As a monographic work, Assoc. Dr. Velina Slavova presents the book "Language, Concept Formation and Child Language Acquisition. An Information Modeling Approach". The edition is supplemented by four reviews, by respected specialists, both in the field of information technology and in the field of cognitive development of language and speech.

In this work, the approach to modeling language and its formation based on information exchange and related cognitive processes is used. A wide variety of theoretical models and principles are used, combining elements from the fields of psychology, linguistics and information technology. This presents the work as a good example of interdisciplinary research, where approaches to solving a certain problem, originating from different scientific directions, are examined in the necessary depth.

The majority of the exposition in the monograph is based on the author's research of Assoc. Dr. Velina Slavova as a result of the work with an international team of scientists.

2. Assessment of contributions in other attached publications.

All publications provided in the procedure are in indexed and referenced editions. The topic of the publications is directed to one main direction - the perception and modeling of the development of the intellectual abilities of individuals by means of information models. Prof. Dr. Slavova is the sole author in the majority of the works. The results presented in them are original and show a lasting and consistent interest in the field under consideration.

3. Citation by other authors.

15 citations of 8 candida articles are presented for the considered procedure. It is noteworthy that all the cited articles are co-authored by foreign scientists. The majority of the citations presented are in works indexed in global databases. This shows that the scientific research of Assoc. Dr. Slavova are received a certain amount of international publicity and recognition.

4. Evaluation of the results of participation in research and creative projects and application of the obtained results in practice.

Prof. Dr. Slavova presents participation in two educational and one scientific project.

The educational project MASTER–FOAD "Virtual University of Pays de la Loire" is a joint initiative between several European universities. As a result of the project, common distance learning courses have been developed for the partners. The applicant's activity in this project was to develop an approach in the presentation of specialized concepts in the developed courses. This activity has resulted in several scientific publications.

The educational project Doctoral College "Collège doctoral francophone régional ès sciences de gestion", implemented by the Francophone Institute of Organization and Management IFAG (ESFAM) in Sofia, has a mission to contribute to research training in the field of management sciences in Central and Eastern Europe. The activity of the college included many methodological and pedagogical activities implemented in cooperation with the scientific supervisors of the doctoral students from the participating web institutions, which took place in the form of doctoral seminars, conferences and summer schools.

The Project EU-FP7 Aliz-e scientific project in collaboration with the Vrije Universiteit Brussel aims to create artificial intelligence tools for small social robots. Direct results of the candidate's participation are new publications that have received multiple citations.

III. Learning and teaching activity

Associate Professor Dr. Velina Slavova is one of the founders of the Department of Informatics at the NBU. Over the years, she has had a significant impact on the development of both the department's programs and the department and its staff as a whole. Her teaching activities focus on the department's core courses in data structures, algorithms, and programming. Her courses are accompanied by detailed lecture materials that are available in the NBU's e-learning system. Prof. Dr. Slavova's current courses include CSCB214 Introduction to Algorithms and Programming, CSCB323 Data Structures, CSCB326 Data Structures Lab, CSCB536 Relational Database Modeling and Implementation, and CSCB817 Natural Language Processing. The created author's learning materials are kept up-to-date.

He regularly participates in thesis defense committees and state exams. She has prepared numerous reviews of diploma theses at the bachelor's and master's level.

Prof. Dr. Slavova is a long-term coordinator of the Erasmus program on the part of the Dept. "Informatics".

IV. Administrative and public activity

He is a member of the Program Council of the bachelor's program in Informatics. He is a long-time member of the faculty council of the Faculty of Economics. She was a member of the NBU Academic Council.

In the period 1996-2000, he was the director of the Informatics program, and from 1999 to 2003, the head of the "Informatics" department.

V. Personal impressions of the candidate (if any)

My personal impressions present the candidate as one of the most respected members to dep. "Informatics", both within the department and in the NBU. It is noteworthy that all those who over

the years have had professional interaction with Assoc. Dr. V. Slavova retain their high opinion of her qualities. Her desire to include younger members of the department in her research should also be noted, thereby supporting their academic development.

VI. Opinions, recommendations and notes on the activity and achievements of the candidate

Conclusion. Based on the above-mentioned aspects of the scientific activity and professional development of Assoc. Dr. Velina Slavova, I express my **positive assessment** of her academic activity and propose the candidate's admission to election by the NBU Academic Council.

Date 21.11.2022

Signature