

OPINION

by Dr Gabriela Nikolova Kirova, Associate Professor in professional field 1.3. Pedagogy of ... (Pedagogy of Mathematics in Primary Education), PhD in professional Field 1.3. Pedagogy of ... (Pedagogy of Mathematics in Primary Education), Faculty of Educational Studies and the Arts, Sofia University "St. Kliment Ohridski",

on the scientific works submitted for the competition for the occupation of the academic position "Associate Professor" in professional field 1.3. Pedagogy of Mathematics and Information Technology in Primary Education, for the needs of the Faculty of Educational Studies and the Arts (FESA), Sofia University "St. Kliment Ohridski" (SU), announced in the State Gazette - issue. 93, November 26, 2019, of the candidate Chief Assistant Professor Dr Lyubka Krasteva Aleksieva, FESA, SU

This opinion is written by me, as a member of the Scientific Jury for the competition in accordance with Order №ПД 38-6/09.01.2020 of the Rector of Sofia University.

Assessment of the candidate's scientific works

1. Compliance with the minimum national requirements and additional requirements of Sofia University "St. Kliment Ohridski"

This opinion has been prepared based on documents submitted for the competition, announced in the State Gazette, issue. 93, November 26, 2019 and on the website of Sofia University "St. Kliment Ohridski". The documents submitted are in a compliance with the requirements of ZRASRB, PPRASRB and the Regulations on the Terms and Conditions for Acquiring Scientific Degrees and Occupying Academic Positions in Sofia University "St. Kliment Ohridski" adopted by the Academic Council on October 31, 2018, and amended by the Academic Council on September 25, 2019 and on October 30, 2019.

The candidate Lyubka Krasteva Aleksieva was awarded with PhD degree for her thesis "Instructional Potential of Educational Software in Mathematics Education" in 2014 in professional field 1.3. Pedagogy of ... (Pedagogy of Mathematics in Primary Education). Her monography book, submitted as a habilitation monographic work does not repeat the work presented for her doctoral thesis.

With the publications and citations presented for the competition, Chief Assistant Dr Lyubka Krasteva Aleksieva, fulfil the minimum national requirements for occupation of the position "Associate Professor" in the professional field 1. Pedagogical Sciences, Direction 1.3. Pedagogy of Mathematics and Information Technology Education with a total of 650.16 points whereas 400 points are required. Her reference about the minimum national requirements is complete and provides the necessary information. The bibliographic reference of her publications and citations is presented as required.

2. Research and scientific achievements

Chief Assistant Dr Lyubka Aleksieva applies for the academic position of Associate Professor with scientific output, comprising a total of 20 titles, of which:

- 1 habilitation work – scientific monography;
- 1 published book on the basis of her doctoral thesis;
- 10 research papers published in international peer-reviewed and indexed scientific journals in world-renowned databases;
- 6 research papers published in non-refereed scientific peer-reviewed journals in Bulgaria;
- 2 studies published in edited collective volumes.

From the total of 20 publications submitted for the competition, the candidate has 7 individual publications, and in three of the other publications she is the first author.

During the 5-year period after her appointment as a Chief Assistant Professor, Dr Lyubka Aleksieva has continued her research systematically, and her publications clearly outline her research interests in the field of instructional technologies in mathematics and information technology education, as well as in the field of distance education. She is also gradually integrating new topics in her research area, which demonstrates her broad scientific interests.

The presented monographic work of Ch. Asst. Prof. Dr Lyubka Aleksieva, "Electronic Resources in Primary Education" (ISBN 978-954-320-664-3) consists of 184 pages, with a bibliography containing Bulgarian and international resources in English. It is reviewed by two reviewers. Both the habilitation and the dissertation work of Ch. Asst. Dr Aleksieva represent the consistency of her scientific interests in mathematics and information technology education.

The presented monography is structured in an introduction and two parts: Part I. Theoretical background of the study and Part II. Empirical research on the attitudes, experiences and competencies of primary teachers in working with electronic resources. The first part consists of three chapters and the second part – of two chapters. At the end of the book, the relevant conclusions are formulated. The introduction justifies and motivates the relevance of the topic. The formulated research questions address the specifics and characteristics of e-resources and the readiness of primary teachers to work with them. The first part of the book is devoted to the theoretical identification of electronic resources. The first chapter outlines the nature and the approaches to define electronic resources. A variety of international researchers' views on this topic are presented. It is indicated that the term electronic resource is used as a synonym of digital resource in the study. The same chapter (paragraph 1.1) clarifies the content of the term educational resource. The author derives a definition for electronic resources, which she uses in her work. Paragraph 1.2 of Chapter One defines the advantages and disadvantages of using electronic resources. In paragraph 1.3, the author presents different approaches for classifying electronic resources, demonstrating critical thinking about some of the indicators included in the classifications. A number of

classifications based on different criteria are presented and the author offers a classification of electronic resources according to the education levels in Bulgaria. The developed rich classification of electronic resources is based on the Bloom taxonomy from 1956 (updated by Anderson and Krathwohl 2001). Ruben Puentedura's SAMR Model (Substitution, Augmentation, Modification, Redefinition) (2013) is also taken into account as a basic approach for classification of electronic resources and a tool for assessing their quality. This classification is based on the approaches for integrating electronic resources in education. The author here also demonstrates her own point of view, identifying the potential and the specifics in applying the SAMR model in Bulgarian schools and especially in primary education. In the same paragraph a study of the different types of e-resources used in Bulgarian schools according to the technology used for their development (Terzieva, Todorova, Kademova-Katsarova, 2016) is cited and analysed. At the end of this paragraph from Chapter One, Aleksieva outlines the classification of e-resources in primary school education which she uses for the empirical research. The last paragraph 1.4 of Chapter One is devoted to deriving criteria for the quality of electronic resources. The starting points are related to the requirements of the European Parliament, researches such as that of Peytcheva-Forsyth (2012), Todorov (2004), Tudzharov (2009). As an active participant in the development of the Standards for Quality of e-Learning Resources, created by the Centre for Distance Education of Sofia University, the author demonstrates an excellent knowledge of various international standards for quality of educational resources. Consistently presented are visual design standards, pedagogical design standards and assessment standards. They serve as a basis for the author's adapted criteria for the quality of educational e-resources in primary school. Thus, at the end of the first chapter, the author's classification of the assessment criteria of e-resources for primary school usage is logically derived.

Chapter Two is devoted to e-resources usage in primary education. Paragraph 2.1 reviews different practices of using electronic resources in European and non-European countries. A special place in this paragraph is assigned to the Bulgarian Strategy for the Effective Implementation of Information and Communication Technologies in Education and Science (2014-2020) by the Council of Ministers from 2014. Here the author analyses critically the real state of the implementation of the Strategy at the moment. Three types of practices are outlined in using electronic resources in Bulgaria (according to their typology; according to educational goals; and according to the specific educational content) and it is concluded that there is a lack of research and literature regarding the practices of Bulgarian primary teachers in using electronic resources. This determines the contribution and importance of the habilitation work. Section 2.2 of Chapter Two is devoted to the specifics of the use of electronic resources, particularly in mathematics education, focusing on e-resources rather than their hardware components. It becomes clear that there is a limited scientific research on this topic (Aleksieva, Dushkov, Yovkova, Chehlarova, Kostadinova and Koleva, Mustakli). The use of various educational software, multimedia presentations and applications for creating e-resources is presented in the same chapter. The results of studies related to multimedia mathematics education of international and Bulgarian authors are cited.

Chapter Three is dedicated on teachers' competences for working with electronic resources, using as a base the European Framework for the Digital Competence of Educators: DigCompEdu (2017). The author focuses her research on the pedagogical competencies of teachers, which are specified in three directions: 1) competencies for selecting digital resources, 2) competencies for creating and modifying digital resources, and 3) competencies for managing, protecting and sharing digital resources. From the analysis of many sources, the author comes to the understanding that the research competence model will be related to the competences of primary teachers in two aspects: effective usage and modification and creation of electronic resources. At the same time, the competences of teachers for working with electronic resources are explored also in two aspects: those related to teaching preparation and those related to digital literacy of teachers. The author's competence model for working with electronic resources is presented in details. It includes two main groups of the competencies studied (for effective selection and usage of electronic resources and for modification and creation of electronic resources) together with their definitions, expressions and the approaches for their acquisition (formal and informal). The criteria for assessing the competencies of primary teachers in this model is summarized by Aleksieva in a table using a five-point scale to assess the degree of fulfilment of each criterion. At the end of Chapter Three the academic preparation of prospective primary teachers for work with electronic resources is analysed, in which preparation the author has significant and direct involvement as a teacher (lecturer and assistant) in specialized compulsory and optional university courses.

Part Two of the habilitation work examines the attitudes, practices and competencies of primary teachers in working with electronic resources. The methodological framework of empirical research (Chapter Four) sets out five research questions to which the author has dedicated her empirical research - a survey of the attitudes, practices and competencies of current primary teachers to work with electronic resources in mathematics education. The aim of the study is formulated on the basis of these research questions. The aim is three-dimensional, clearly and well defined. It is decomposed into five research tasks that are relevant to the Aleksieva's aim. The research method is a survey developed based on the theoretical research presented in Chapter One. The survey is conducted at the beginning of the 2018/2019 academic year with 452 participants – primary teachers from Bulgaria (with representatives from the capital, large and small towns and villages). A survey was conducted online through Survey Monkey application. In the fifth chapter of the monography, the results of the survey are presented. All results are skilfully analysed, competently discussed and justified by the author. Free responses in the survey are categorized and grouped through content analysis and are also discussed in details. It could be clearly confirmed that the research results obtained by the author are scientifically significant.

In relation to "Conclusions" paragraph, it could be asserted that the conclusions and recommendations made in the last part of the monography are reliable and fully relevant to the conducted theoretical and empirical research. They are also relevant to science and practice (in particular for the qualifications and university training of primary teachers). It is

worth noting that there are no analogical researches to the work of Ch. Asst. Prof. Dr Lyubka Aleksieva, which is characterised with a strong contribution.

The other scientific papers presented by Ch. Asst. Prof. Dr Lyubka Aleksieva are new, up-to-date and devoted to important issues of teaching methodology of mathematics and information technology, namely the integration of information and communication technologies in the modern learning process.

The contributions of scientific works of L. Aleksieva submitted for the competition are real, adequate to the research and achievements of the author and provide sufficient reasons for a positive vote on her application for associate professor.

The scientific papers presented by the candidate do not repeat those of previous procedures for acquisition of a scientific degree and occupying academic position.

There is no plagiarism proven in the scientific works presented in the application.

The candidate has the required number of citations, both in refereed and indexed journals (3) and in non-refereed journals (13), thus meeting the minimum national requirements.

3. Teaching activities

As it is seen from appendix 15 of the application documents, the candidate Ch. Asst. Prof. Dr Lyubka Aleksieva, fully meets the requirements for teaching activity. She is a lecturer and assistant in many courses in Bachelor's and Master's degree programmes in pedagogical specialties. She has been authoring and actively updating and modernizing the curricula of her courses. She is considerably and directly involved in the practical training of prospective teachers in the field of the competition. Since 2010, Aleksieva has been an adjunct lecturer at the FESA, SU in practical seminars in mathematics education, since 2011 she became an Assistant Professor, and since 2015 she is a Chief Assistant Professor in professional field 1.3. Pedagogy of Mathematics and Information Technology in Education in the same faculty. She has been teaching in a variety of academic disciplines in the professional field of the competition, including lecturing in mathematics education in primary school, information technology in education, multimedia technologies in education; she is also conducting seminars in the same disciplines and in information technology education in primary school. For three years now she has also been teaching in the first accredited distance education programme "ICT in Education" of the Faculty of Pedagogy, SU.

It is worth pointing out the serious research activity of the candidate, who annually participates in a number of national and international scientific projects, such as European applied projects which results and innovations she implements in her courses.

4. Details of the candidate

Chief Assistant Professor Dr Lyubka Krasteva Aleksieva graduated from Bachelor Degree programme "Primary Education with English as a Foreign Language" in 2006, and

two years later – in 2008, she completed a Master Degree programme "Information Technology in Primary Education" at the FESA, SU. In 2014, she earned a Doctoral degree in 1.3 in the Pedagogy of Mathematics in Primary Education. Since 2010 Chief Assistant Professor Aleksieva is a lecturer and designer of online content in more than 10 different courses, which are taught in several specialties of the Faculty of Educational Studies and the Arts, Sofia University "St. Kl. Ohridski". Since 2017 she has been teaching in one of the courses of the first accredited distance education program at Sofia University "St. Kliment Ohridski" of the Faculty of Pedagogy. Since 2015, Ch. Asst. Prof. Lyubka Aleksieva is an expert and a technical assistant at the Centre for Distance Education (CDE) of Sofia University.

5. Personal impressions of the candidate

I have known Lyubka Aleksieva since her Bachelor Degree Programme at the Faculty of Preschool and Primary School Education (now Faculty of Educational Sciences and Arts). With her qualities and deep knowledge, she was a distinguished student among the undergraduate students, and afterwards among the students in her Master Degree programme. As an assistant in Primary Education Department, L. Aleksieva made a strong impression with her activity, proactiveness and responsibility in fulfilling her academic and organizational tasks. As members of the same teaching team, Ch. Asst. Prof. Dr Lyubka Aleksieva and I have been working together for 10 years and I have observed her professional growth as an independent young scientist with original ideas and specific research skills. Aleksieva's indisputable expertise in the professional field enables her to successfully achieve her professional goals.

6. Conclusion

Professional profile, teaching activities, as well as the scientific achievements and contributions of Ch. Asst. Prof. Dr Lyubka Aleksieva, fully meet the mandatory requirements and scientific criteria for the academic position of Associate Professor. Based on the demonstrated high scientific achievements and the significance of her work, I give my positive assessment to the application of Ch. Assistant Professor Lyubka Krasteva Aleksieva in this competition and I propose her to be chosen for the academic position of Associate Professor in the professional field 1.3. Pedagogy of Mathematics and Information Technology in Primary School.

17/02/2020

Reviewer:

Assoc. Prof. Dr Gabriela Kirova