Appendix 12a

REVIEW

of dissertation for the acquisition of:

educational and scientific degree " **doctor** "	X
scientific degree **"Doctor of Science"**	
	the true is indicated by the sign "X"

Author of the dissertation:

		Monika	Yanulova	Petrunova	
academic position	scientific degree	name	middle name	last name	workplace

Topic of the dissertation:

Interactive Systems for Learning and Testing

Scientific area:

4	Natural Sciences, Mathematics and Informatics
code	name

Professional area:

4.6	Informatics and Computer Science
code	name

Scientific specialty:

Informatics

The review was written by:

Associate Professor	PhD	Stefan	Mihailov	Filipov	UCTM
academic position	scientific degree	name	middle name	last name	workplace

1. Completion of the provided documents:

A) The dissertation and the competition documents are in full compliance with the Regulations.	4 points	X
B) The documents are complete but do not fully comply with the requirements of the Regulations.	2 points	
C) The documents are not completed in accordance with the requirements of the Regulations.	0 points	

		one of the answers given is marked with the sign "X"

Missing documents and violated standards must be described if response C is marked.

2. Meeting the minimum requirements under the Regulations:

A) The candidate meets the minimum requirements	20 points	X
B) The candidate doesn't meet the minimum requirements	0 points	
		one of the answers given is marked with the sign "X"

It must be filled in if answer B is marked. The publication activity of the candidate is analyzed. The response of the results achieved (quoted) is analyzed.
The candidate meets the minimum requirements in accordance with the current Regulations. Three scientific publications are presented, all indexed in SCOPUS, which satisfies both the quantitative and qualitative criteria for scientific output. One of the publications has 4 citations, indicating a certain scientific impact and interest in the achieved results. Overall, the publication activity complies with the requirements for obtaining the educational and scientific degree "Doctor", showing consistency in the research topic and development in the field of e-learning and online testing.

3. The relevance of the topic of the dissertation:

A) The topic is relevant and new (there are no known results on the topic by other authors)	8 points	
B) The topic is relevant and results from other authors are known	6 points	X
C) The topic is not relevant, but results from other authors are known	2 points	
D) The topic is not relevant and no results from other authors are known	1 point	
E) The topic does not correspond to the level of dissertation	0 points	
		one of the answers given is marked with the sign "X"

The evaluation of the relevance of the dissertation must be substantiated
The topic of the dissertation is relevant and significant, as it is directly related to the development of e-learning and the digitalization of the educational process. The COVID-19 pandemic accelerated the adoption of learning in an electronic environment and led to the widespread use of online platforms for teaching and assessment.

In this context, issues related to the effectiveness of online testing, automated processing of results, and analysis of learners' knowledge acquire particular practical importance. The topic has been widely studied in the scientific literature but remains relevent due to the dynamic development of technologies and the need to improve assessment tools. Therefore, the dissertation falls within a modern and actively developing research area with a clearly expressed applied orientation.

4. Knowledge of the problems, subject of research in the dissertation:

A) The doctoral student knows in detail the achievements of other authors on the topic of the dissertation	8 points	
B) The doctoral student is partially familiar with the achieved results on the topic of the dissertation	4 points	X
C) The doctoral student has no prior knowledge of the status of the problems in the dissertation	0 points	
		one of the answers given is marked with the sign "X"

The evaluation must be substantiated if answer C is marked.

5. Type of research:

A) Theoretical	4 points	
B) Applied	4 points	
C) Theoretical with application elements	4 points	X
D) It does not correspond to the level of dissertation	0 points	
		one of the answers given is marked with the sign "X"

The level of research must be substantiated if answer D is marked.

6. Objectives of the research:

A) Realistic and of scientific and / or applied interest	8 points	X
B) Realistic, but not of scientific and / or applied interest	3 points	
C) Unattainable (unrealistic)	0 points	
		one of the answers given is marked with the sign "X"

Objectives must be specified. The type of the set objectives must be justified.
The main objective of the dissertation is to investigate the capabilities of existing online testing platforms and to develop methods for automated analysis and interpretation of the obtained results. The specific objectives include: - analysis and comparison of widely used online testing platforms - study of the preferences of teachers and learners - development of models for transforming test results into grades - creation of a methodology for analyzing typical errors and knowledge gaps The stated objectives are realistic, well formulated, and have a clearly expressed applied nature, aimed at supporting teaching practice and improving the assessment process.

7.Methods of research:

A) Adequate to research and set objectives	8 points	
B) Partially appropriate, enabling part of the scientific objectives and / or applications to be achieved	4 points	X
C) Inappropriate methods	0 points	
		one of the answers given is marked with the sign "X"

Methods must be specified. The type of methods used is justified.
The dissertation employs a combination of scientific-applied and applied research methods, including: - survey studies among teachers and students - comparative analysis of existing platforms for e-learning and online testing - development of computational models and algorithms for processing results - experimental implementation and validation of the proposed methods in a real educational environment The methods are generally appropriate for achieving the stated objectives, but more advanced formal or mathematical analysis methods are used to a limited extent, which justifies the assessment of partial adequacy. Nevertheless, the chosen methodological approach is typical for applied research in the field of educational technologies.

8. Contributions of the dissertation:

A) With lasting scientific and / or applied response, they form the basis for new research and applications	20 points	
B) They are of significant scientific and / or applied interest, complete and / or summarize previous research	16 points	
C) They are of scientific and / or applied interest	12 points	X
D) Lack of significant contributions	8 points	

E) Lack of contributions	0 points	
		one of the answers given is marked with the sign "X"

Contributions must be specified. The type of results achieved must be justified.
The main contributions of the dissertation are predominantly of a scientific-applied and applied nature and can be summarized as follows: - A systematic analysis of leading platforms for e-learning and online testing used in Bulgaria has been carried out. - Empirical studies have been conducted to identify the preferences and practices of teachers and learners. - Models and algorithms have been developed for the automated transformation of test results into grades, in accordance with regulatory requirements. - A methodology has been proposed for analyzing typical errors and identifying knowledge gaps among learners. - The possibility for automation of processes traditionally performed manually by teachers has been demonstrated, leading to improved efficiency of the educational process. The achieved results are practically applicable and can be implemented in a real educational environment.

9. Evaluation of the compliance of the dissertation summary with the dissertation:

A) Full compliance	4 points	X
B) Compliance of the main parts	2 points	
C) Lack of compliance of the main parts	0 points	
		one of the answers given is marked with the sign "X"

The evaluation must be substantiated if answer C is marked.

10. Participation of the doctoral student in the achievement of the results of the dissertation:

A) The doctoral student has at least an equal participation	8 points	X
B) The doctoral student has secondary participation	5 points	
C) The participation of the doctoral student is unnoticeable	0 points	
		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the items B or C is marked.

11. Critical notes:

A) Lack of critical notes	8 points	
B) Critical notes of a technical nature	7 points	
C) Critical notes that would partially improve the results achieved	4 points	X
D) Significant critical notes	0 points	
		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the answers C or D is marked.
The issue of adaptive testing is not addressed in the dissertation, although it represents an important capability of modern electronic assessment systems. Online testing allows dynamic adjustment of question difficulty according to the learner's level, as well as personalization of the learning process. The inclusion of adaptive models would significantly enrich the dissertation and increase its scientific value.

12. Conclusion

A) The evaluation of the dissertation is **POSITIVE**	This evaluation is assigned to a total number of at least 65 points	X (78 points)
B) The evaluation of the dissertation is **NEGATIVE**	This evaluation is assigned to a total number below 65 points	
		one of the answers given is marked with the sign "X"

To be filled in at the request of the reviewer
Based on the presented dissertation, the achieved results, and their evaluation, I consider that the requirements for obtaining the educational and scientific degree "Doctor" have been fulfilled. Therefore, I propose to the esteemed Scientific Jury to award Eng. Monika Yanulova Petrunova the educational and scientific degree "Doctor" in the professional field 4.6 "Informatics and Computer Science".

26.04.2026 y.	The review was written by:	
date	**Assoc. Prof. Stefan Mihailov Filipov**	signature