REVIEW

by Prof. Dr. Ivaylo Ivanov Burov

regarding a dissertation for the acquisition of the educational and scientific degree "Doctor" (PhD), in the Doctoral Program: Preschool Pedagogy Professional Field: 1.2. Pedagogy Higher Education Area: 1. Pedagogical Sciences on the topic:

"INNOVATIVE EDUCATIONAL TECHNOLOGIES IN THE PREPARATION OF CHILDREN FOR SCHOOL"

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Grounds for writing the review: Order No. RD-16-270/17.12.2025 of the Rector of Konstantin Preslavsky University of Shumen. Doctoral student Marinka Chaneva Ivanova was discharged with the right of defense via Order RD-10-141/25.02.2025 of the Rector of Konstantin Preslavsky University of Shumen, effective from 01.02.2025, for the acquisition of the educational and scientific degree "Doctor" in the doctoral program Preschool Pedagogy, professional field 1.2. Pedagogy, higher education area 1. Pedagogical Sciences.

1. Brief Biographical Data of the Doctoral Student

The doctoral student, Marinka Chaneva Ivanova, acquired a Bachelor's degree at Konstantin Preslavsky University of Shumen, majoring in Preschool Pedagogy, in 1996. In 1998, she completed a postgraduate qualification in Primary School Pedagogy at Konstantin Preslavsky University of Shumen. In 2007, she acquired the Fifth Professional-Qualification Degree at the Department for Information and In-Service Teacher Training at Trakia University, Stara Zagora. She acquired her Master's degree in 2011 at Konstantin Preslavsky University of Shumen, majoring in Preschool and Primary School Pedagogy. In the period 2011–2021, she acquired the Fourth, Third, Second, and First Professional-Qualification Degrees at DIKPO-Varna (Department for Information and Qualification of Teachers) affiliated with Konstantin Preslavsky University of Shumen. In 2022, she became a doctoral student at Konstantin Preslavsky University of Shumen. Immediately after completing her Bachelor's degree, she began working in her specialty as a teacher in a kindergarten. Later, she held the position of Senior Teacher at Kindergarten No. 19 "Konche Vihrogonche" (Shumen) and Chief Teacher at Kindergarten "Svetulka" (Shumen). The doctoral student presents records of several dozen completed trainings, the majority of which are focused on the problems examined in the dissertation - specifically in the field of innovations in educational and information technologies applied in teaching.

2. Relevance of the Researched Problem

The problems examined in the dissertation are highly relevant and are characterized by both theoretical and practical significance. The conclusions are well-grounded and simultaneously emphasize the roles of the teacher in children's education, the gamified approach toward their emotionality, and information technologies as an interactive multimedia mediator in education.

3. Characteristics of the Dissertation

The dissertation consists of an introduction, three chapters, inferences, a conclusion, contributions, and an appendix. The total volume is 223 pages, of which 193 comprise the main body, 7 pages of bibliography consisting of 83 bibliographic sources (52 by Bulgarian authors, 7 in Latin script, 24 online), a 17-page appendix, and 3 pages of inferences, conclusion, and contributions.

In the **Introduction**, the doctoral student touches upon the term "School Readiness," its interpretation, and the role of school readiness regarding the child's faster adaptation to the school environment. She derives the necessity of researching the possibilities of innovative technologies for preparing preschool children to achieve full mastery of program content, sustainability of knowledge, and the formation of competencies. Based on this, the doctoral student defines the object and subject of the research. The goals, tasks, methods, and the hypothesis of the research are defined.

In **Chapter One**, a theoretical analysis of the researched problem is performed, wherein: In **Section 1.1**, preschool education is examined as a transition between two educational institutions. The legal basis and regulatory documents related to preschool education, the environment in which preschool education takes place, and the gamified approach to teaching the child—consistent with their age and psychological characteristics—are covered. In addition to education, emphasis is placed on the upbringing and social orientation of preschool education. The doctoral student describes in detail the educational areas—precursors to school subjects—and the competencies that children in the fourth age group must acquire (Bulgarian Language and Literature, Mathematics, The World Around Us, Fine Arts, Music, Construction and Technologies, Physical Culture), which are later included in the empirical study.

In **Section 1.2**, emphasis is placed on school readiness, facilitating the child's smooth transition to learning activities in primary school and their movement into a new educational structure. The doctoral student examines the recommended illustration of more abstract learning materials based on visual support, as well as the verification and assessment of children's achievements through positive feedback. A comparison is made between education in the preschool and primary stages, highlighting the necessity of a smooth transition in the teaching methods used. The key competencies under Art. 77 of the Pre-school and School Education Act

(ZPUO), which are the subject of the study in Chapter Two, are described. Theoretically, the doctoral student refers to numerous established authors examining school readiness and the types of readiness—personal, intellectual, and socio-psychological.

In **Section 1.3**, Innovative Educational Technologies in the kindergarten are covered. In a theoretical aspect, the doctoral student refers to definitions of the concept of "innovation" by a number of proven scholars in the field of education, adopting a definition that interprets the meaning closest to the tasks set in the dissertation. The connection of technologies with education, their role in the learning process, as well as outside of it in adolescents and the formation of their thinking, is examined. Emphasis is also placed on the Digital Competence Framework adopted by the EC. Information technologies are examined in hardware and software aspects, emphasizing interactivity and multimedia, and regarding communication technologies—internet, dialogue, conference, and distance technologies. The doctoral student draws attention to the fact that in the educational area "Construction and Technologies," children must form their skills in information technologies starting from kindergarten. Theoretically, she refers to numerous authors sharing experience in the application of digital technologies and computer equipment in the educational process. Attention is also paid to ergonomic requirements when using these technologies in the education of children. The doctoral student defines the choice of innovative technologies for conducting the research—Envision, Bee-Bot, STEAM—relating respectively to visual interactive learning, robotics and programming, and integrated learning. Examples of the application of the respective technology for the development of observation, mathematical and logical thinking, critical thinking, creativity, and problem-oriented skills are presented.

In **Chapter Two**, the doctoral student defines the research design, forming five criteria (language and speech skills, mathematical skills, social skills, gross and fine motor skills, digital skills), each with five indicators. An application of a pre-selected innovative technology related to the respective criterion is applied to each indicator. According to the plan, the research passes through three stages: ascertaining (diagnostic), formative (training), and concluding. During the ascertaining stage, the doctoral student conducts entry diagnostics regarding the children's level for each criterion at the start of the experiment. During the formative stage, the training of the control and experimental groups is carried out in the traditional way and with the application of innovative educational technologies defined in the research toolkit, respectively. During the concluding stage, the doctoral student conducts exit diagnostics with tasks identical to the entry diagnostics to prove/reject the hypothesis, performs statistical and comparative analysis of the obtained data, formulates conclusions, and presents them for discussion with the pedagogical teams participating in the experiment.

In **Chapter Three**, the analysis of the results from the conducted research is presented. It is noteworthy that the results obtained from the ascertaining result in

the experimental and control groups are similar, which is a prerequisite for the successful interpretation of the data obtained during the concluding stage. The results from the data obtained during the concluding stage show an increased average value of the results in the experimental group compared to the control group, which supports the proof of the hypothesis assumed in the study. This trend is valid for each of the five criteria, which is reflected in Diagram 18, with the doctoral student having previously presented diagrams of the comparative analysis for each of the criteria.

4. Assessment of Scientific and Applied Scientific Contributions

The scientific contributions indicated by the doctoral student are acceptable and developed in both scientific and practical-applied terms. The large volume of practical-applied work performed during the research is impressive, covering five criteria and twenty-five parameters related to them using a technological tool adapted for this purpose.

5. Assessment of the Abstract (Dissertation Summary)

The Abstract covers a volume of 55 pages; it is written according to requirements and objectively reflects the content of the dissertation.

6. Assessment of Publications Related to the Dissertation

The doctoral student has listed three publications related to the dissertation research. The publications are connected to the research topic and reflect the search for solutions in the problems examined by the author.

7. Critical Notes and Recommendations

The dissertation reflects the doctoral student's many years of experience working with preschool children and her ability to successfully apply information and communication technologies in education based on personal motivation and completed training courses. In the analysis of the results from the exit diagnostics, a tendency is noticed to interpret the higher average standard deviation as an achievement, which is somewhat debatable. A higher average standard deviation is a sign of greater heterogeneity (diversity) obtained in the experimental group regarding the researched criterion after the training compared to the control group. The comparative analysis of the mean values between the control and experimental groups is the more accurate criterion regarding the proof of the hypothesis.

8. Conclusion

The dissertation is the result of a thorough theoretical-applied study with indisputable scientific value, reflecting the doctoral student's pursuits in theoretical and applied terms. Supporting the conclusions made by the doctoral student in the

dissertation and assessing the Abstract as meeting the requirements of the Law and the Regulations for the Development of the Academic Staff in the Republic of Bulgaria, I give my **positive assessment** and have grounds to propose to the honorable Scientific Jury to award **Marinka Chaneva Ivanova** the educational and scientific degree **"Doctor"** in Professional Field 1.2. Pedagogy, Higher Education Area 1. Pedagogical Sciences, doctoral program "Preschool Pedagogy."

04.02.2026

Recension prepared by:.....

Prof. Dr. Ivaylo Ivanov Burov