

REVIEW

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*Dissertation title: "Verification and digitalization of a scale for assessment of
learning skills through play PTESS at the age of 0 to 4 years"*

Author: Nina Yordanova, PhD student in independent study at the New Bulgarian University

Scientific supervisors: Assoc. Prof. Polina Mihova, PhD
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Nina Yordanova was enrolled as a doctoral student in independent training at the New Bulgarian University by order of the Rector of NBU № 3-PK-143 on 28.02.022. By Order №3-PK-25/17.10.2024 of the Rector of New Bulgarian University, on the basis of Art. 14, para. 3 of the Regulation on the Development of NBU and a decision of the Faculty Council at the Master's Faculty (meeting № 12/26.09.2024), I am appointed as a member of the scientific jury in the procedure for the defense of a dissertation on the topic "Verification and digitalization of a scale for assessing learning skills through play PTESS in children aged 0 to 4 years". The author of the dissertation is Nina Petrova Yordanova, a doctoral student in independent training, enrolled with the right to defend in the doctoral program "Logopedics" in the professional field 7.4. Public Health. The materials provided for the defense may be accepted as grounds for the Scientific Jury to hear and evaluate the candidate for the acquisition of the educational and scientific degree "doctor" in accordance with the Law on the Development of the Academic Staff of the Republic of Bulgaria and the Regulations for its implementation.

1. General biographical presentation of candidate (education and qualifications, professional experience, etc.)

Nina Petrova Yordanova obtained a higher education in Defectology with a specialization in "Logopedics" in 1989 at Sofia University "St. Kliment Ohridski". Confirmation of her consistency is that almost immediately after graduation she began working in the acquired specialty and has not stopped until now. She began her professional experience at 56 Speech Therapy Kindergarten, Sofia. Then, for 12 years, she worked as a speech therapist at the Center for Treatment and Rehabilitation of Children with Cerebral Palsy, Sofia. The development of her professional skills led to her promotion to head of the "Psychological and Pedagogical Interventions" sector for the period 1999-2002 at the same center. From 2002 to 2004, she worked in the largest specialized speech therapy structure - the State Speech Therapy Center, Sofia. One of Nina Yordanova's significant achievements in practical terms is related to her

work at the Company "Unlimited Kids Care", of which she is the founder and executive director from 2007 to the present, where she actively works in developing a number of useful products such as: providing first psychological aid at the birth of a child with a facial anomaly, a Bulgarian version (adaptation) of Children's Sign Language, a scale for assessing learning skills through play, a model for nutritional therapy, etc. She also participates in the implementation of an ALA project funded by TWF for multidisciplinary treatment of children with facial anomalies. Together with the Beleduk - Pumpelina team, she develops and approves a training and therapeutic system and introduces it for use in over 10 social institutions in Bulgaria. Nina Yordanova's pursuit of professional development is also related to continuing education: for the period from 1996 to the present, she has participated in over 15 training courses, some of which have been proven to be leading in practice: "Montessori Pedagogy", Munich, Germany; "Developmental Therapy in the First and Second Years of a Child's Life according to Piaget" Munich, Germany; Talk Tools - Oral Positioning Therapy, Sara Rossenfeld Johnson; Orff - Music Therapy for Specific Developmental Disorders", Munich, Germany, etc. Nina Yordanova's theoretical and practical developments have been presented in a number of scientific national forums in our country, and to date she has published over 30 publications.

2. Actuality of the dissertation work

The topic of the dissertation is focused on two important aspects related to our time: early detection of problems in child development and the use of digital products to support the work of specialists. Doctoral student Nina Yordanova has taken on the task of unifying these aspects by developing and validating a digital scale for assessing learning skills through play PTESS (Pumpelina Therapy and Education System Scales) for children aged 0 to 4 years. Already in the introduction, she argues for the need for a reliable tool for assessing and diagnosing learning skills through play, which can be used by professionals and parents in order to timely identify the needs for therapy and support in child development. The purpose of the proposed research is clearly formulated and justified.

Learning abilities begin to develop from the earliest childhood through play. Its deviations at this age subsequently lead to retardation in the acquisition of school skills. From a scientific and practical point of view, there is still a deficiency of screening tools for early detection of problems in child development in our country. The presence of a modern digitalized product for early identification of learning problems and prevention of subsequent learning disorders can be defined as socially significant and relevant for practice. The comparison of the data with the results of the Munich Functional Diagnostics confirms the significance of the developed product in scientific terms as well.

3. Structure and content of the dissertation work

3.1. Content of the dissertation

The dissertation has a total volume of 288 pages and contains an introduction, three chapters, contributions, conclusions, recommendations, conclusion and a bibliography of 251 sources, of which 50 are in Cyrillic and 201 in Latin. It is supplemented with 15 appendixes.

3.2. Content and qualities of the theoretical part

The theoretical part presents the problem of assessing child development and the participation of parents in the process of forming learning skills. Special attention is paid to the development of communication skills as a prerequisite for including the child in the game process in order to stimulate his development. Despite the fact that there are numerous

publications in the scientific literature, Nina Yordanova has managed to select those that are related to the purpose of her stated scientific research, which is evidence of a high degree of knowledge of the problem. One of them is by Leach (1986), who connects the forms of play in the order of their appearance from the first months after birth and postulates the fact that children's skills in transferring partner experience in various game situations can be accepted as a predictor of the formation of learning skills through play. The consideration of play as a primary means of learning and development, as well as the essence of training for children and parents, is subordinate to the topic of the dissertation, and Leach's theory (1986) is one of the foundations for the development of the methodology of the scientific research.

Special attention is also paid to the Munich Functional Diagnostic Scale of Development (MFED) (Hellbruegge et. al, 1994), as the author draws a parallel with the diagnostic scales of Bayley Scales of Infant Development (Bayley, 2005) and the standardized for Bulgaria Denver II test, in order to look for the difference with the mentioned methodologies: the addition of a percentage tolerance between 50% and 95% after the 8th month of child development, due to the inclusion of socio-pediatric components related to play and interaction between mother and child. The indicated conclusion gives grounds for subsequently using MFED in the development of the scientific research program (Playful Learning Program PTES).

One of the positive aspects of the theoretical part is the author's classification for presenting training for parents in four main aspects: training for prevention, training for correction, training for training parents as co-therapists and training for creating a group for own experience or group supervision. The forms and systems of training education for parents are also described in detail, and linking these forms and systems within the author's classification would increase the quality of the first chapter. Focusing attention on the rules of the game and types of games for development, through the active involvement of parents, is part of the theoretical basis for developing the assessment procedure.

Attention is paid to the essence of the verification process in the development of diagnostic tools. It is advisable to describe the option of presenting this sub-item in the second chapter as a part of the basis of the research methodology.

The essence of the digitalization process is described in a limited volume. Considering the topic of the dissertation, I believe that it is appropriate to analyze this sub-item in more detail, from the perspective of already developed digitalization products in the field of child development and its deviations, in order to be able to compare the achievements to date, which have been on the rise over the past ten years. Such an examination will further support the justification for the development of the dissertation.

At the end of the first chapter, the doctoral student draws attention to the connection of digitalization with the assessment process in order to improve the effectiveness of assessment and the possibilities for monitoring the success of therapeutic strategies. The conclusions drawn are the basis for the development of the PTESS scale.

Summarizing the analysis of the theoretical part, it can be summarized that doctoral student Nina Yordanova demonstrates skills in selecting scientific literature and correct citation when analyzing, interpreting and summarizing literary sources.

3.3. Content and qualities of the experimental procedure

Although traditionally the experimental procedure and methodology of the scientific research are presented in one chapter, in the second chapter doctoral student Nina Yordanova describes only the author's program for learning through play PTES, the methodology of its

implementation and results of the study with PTESS scales and data for their validation. The proposed program is the subject of the joint work of doctoral student Nina Yordanova with her colleagues Milena Makaveeva and Henrieta Ilieva, and the scales and their verification of the long-term work of the doctoral student. The program and the scales are presented informatively and in detail for each of the ages. The scales for assessing success are noted. On page 77 the assessment criteria are indicated, but it is not clear when a grade of 1 is given, because this value is indicated both when coping with and when not coping with the tasks. The criteria for verification and validation of data described in the first chapter were applied by the author with respect to the Play-Based Learning Program PTES, and were conducted in two stages: (1) a preliminary two-year study of 20 children with normal or atypical development and (2) a three-year study of 6153 children aged 0 to 7 years for the period 2010 - 2022. The large number of children studied allows important conclusions to be drawn from the data obtained with a view to developing an objective assessment scale.

One of the merits of the dissertation work is the well-thought-out and consistent development of the PTESS assessment scale for learning skills in the age range of 0 to 4 years, namely the two-stage study to determine the normative data for assessment and the implementation of the next step - digitalization of the program. Although the COVID pandemic has affected the inclusion of the estimated number of children studied, the therapy applied to 277 children allows important conclusions to be drawn from the digital assessment of the progress of the applied therapy with the participation of parents.

Chapter three begins with defining the goals of the scientific research. They are clearly formulated, although they are followed by an explanation of the ways to achieve them. The tasks are subordinate to the goals of the research. The object and subject are formulated precisely and concisely and point to the contributing elements of the dissertation work: the use of the PTESS scales as a diagnostic and therapeutic platform to support the development of individual therapeutic strategies and their monitoring.

The two hypotheses set are clearly formulated. Hypothesis No. 1 states that if the results of the comparative analysis between the studied individuals with PTESS and the Munich Functional Developmental Diagnostics establish a similar result between the two scales, then the verification of PTESS can be considered successful. The formulation of Hypothesis No. 2 is aimed at proving the application of the PTESS scale for assessing learning skills through play in children aged 0 to 4 years as a reliable and valid tool for measuring cognitive, social and motor development.

The design of the study is subordinate to the goals and objectives of the study and its implementation is divided into four thoroughly described stages: preparatory stage, pilot study, actual study, analytical stage.

The stated methods for statistical data processing presume a comprehensive analysis to prove the hypotheses set.

The contingent of the scientific study, called "participants - research subjects, in the process of verification of the PTESS scales" is presented in a table and meets the requirements for objectivity of statistical data processing. The studied children are divided by age groups, although the tabular form allows to indicate gender differences and percentage ratios to their total number.

Although the overall presentation of the methodology of the scientific research is not logically consistent, it can be summarized that there is a justified and developed theoretical model of the research, aimed at validating and digitizing a scale for assessing learning skills through play. The selected tools are subordinate to the set goals and objectives in order to prove

the hypotheses.

3.4. Content and qualities of the presentation of the results and their analysis

The results of the scientific research and their analysis are presented in the third chapter. Initially (section 5) the results of the verification of the PTESS scales are presented. The results obtained from the correlation and regression analysis for the comparison of data from the PTESS and the Munich Functional Development Diagnostics give the doctoral student grounds to confirm Hypothesis No. 1, with which she verified the PTESS. This step can be defined as one of the contributing elements of the work. A positive element of this part is the direction of the obtained results towards a subsequent empirical study to establish the influence of the environment on the development of the child, with the aim of changing the items specified in the current PTESS scales and their placement for assessment at a previous or subsequent age.

The results of the development of the digitized assessment scale through the WordPress platform are presented clearly and in detail in the appendixes. They provide grounds for doctoral student Nina Yordanova to prove the validity of Hypothesis No. 2 that the use of the PTESS scale to assess learning skills through play in children aged 0 to 4 years provides a reliable and valid tool for measuring cognitive, social and motor development. Proving the hypothesis is of great importance for speech therapy practice, because it contributes to the early detection of problems in child development and timely initiation of speech therapy for prevention.

I appreciate the highly developed concept and toolkit for conducting research through monitoring and social psychological training, in support of the use of the digitalization of the PTESS scales for parents and specialists. The doctoral student skillfully focuses on dividing parents into separate groups depending on the specifics of social interactions in the family, which determine the features of their learning. Their detailed justification also specifies the guidelines for the training. The study of the impact of monitoring and training for parents for individuals who conducted a parental self-assessment through the digital platform PTESS can definitely be highly appreciated, where after the interpretation for each age subgroup, Nina Yordanova draws conclusions from the results obtained. The clarification of the most critical groups of 0-3 months and 9-12 months and the analysis of them prove the author's ability for critical thinking in interpreting the results. Supporting my statement about her qualities is the determination of the third phase of the socio-psychological training as unsuccessful, due to the cases of conducting training in a group of families who did not know each other before. The conclusions made in this part are based on the data obtained and support the proof of Hypothesis No. 2.

In summary of the presented data and their analysis, it can be stated that Nina Yordanova demonstrates scientific skills in interpreting the data obtained, as well as in handling statistical evaluation methods. There are statistical data for multiple correlations in order to prove the hypotheses. The interpretation of the data is supported in places with theoretical models and data from related studies in order to answer research questions arising from the results obtained.

The comprehensive empirical data allow the doctoral student to draw conclusions that are essential for theory and practice and to give substantiated recommendations aimed at implementing PTESS in practice, including in the healthcare system with a view to improving the quality of life and the development prospects of children.

4. Description of contributions

The dissertation represents a significant contribution in both theoretical and practical aspects, especially in the field of speech therapy theory and practice in Bulgaria. The main theoretical contribution of the work is the developed model for the development of children's play, which serves as the basis for the creation and verification of the PTESS scale. This is supported by empirical data that confirm the validity and reliability of PTESS as a tool for assessing learning skills through play in children from 0 to 4 years old. Correctly selected statistical methods provide grounds to identify the main factors that influence the development of children at an early age: sensory integration, motor planning, and social skills, which are critical for the successful learning and socialization of the child.

A contribution in a practical and applied plan is the verification of the developed toolkit. Proving its applicability is essential for speech therapy practice. The digitalization of PTESS provides the opportunity for parents and speech therapists to conduct an early assessment of child development, thereby promptly identifying deviations from age norms.

Another practical contribution is the development of social-psychological training for parents, which helps parents develop communicative and social skills necessary to stimulate the development of their children.

5. Dissertation abstract

The abstract correctly and accurately reflects the content of the dissertation work, with the emphasis on the results obtained from the scientific research. 5 scientific publications in specialized publications are presented, three of which are in journals indexed in Scopus, which fully covers the minimum scientometric indicators for acquiring the ONS "Doctor" in area 7. Health and Sports.

6. Personal qualities of the author

I have known Nina Yordanova for more than 20 years. I can say that she is a prominent specialist in practice, who has developed many useful products in the field of speech therapy. She stands out for her initiative, innovation and leadership qualities. She works actively for the development and establishment of speech therapy as a health profession and the introduction of minimum national requirements for acquiring the profession of "speech therapist" and for its practice.

7. Opinions, recommendations and notes

Considering the merits of the dissertation work on the topic "Verification and digitalization of a scale for assessing learning skills through play PTESS in the age of 0 to 4 years", I would like to draw attention to some details such as:

1. The technical design of the work: there is no clear distinction in separate chapters of the methodology of the scientific research from the results and their analysis.
2. The names and numbering of the figures and most of the tables are missing.
3. The verification covers children aged 0-7 years, and the topic is focused on the age range 0-4 years (pp. 83 and 84).

Conclusion

The dissertation on "Verification and digitalization of a scale for assessing learning skills through play PTESS in the age of 0 to 4 years" presents an up-to-date scientific study. The doctoral candidate demonstrates a thorough knowledge of the scientific issues and the necessary scientific research skills. The required publications are available. The dissertation work and the submitted documents meet the basic technical and regulatory requirements for the acquisition of the educational and scientific degree „Doctor" in accordance with the Law on the Development of the Academic Staff of the Republic of Bulgaria and Regulations for its implementation, and the Internal regulations for development of the academic staff of New Bulgarian University. I recommend to the respected Specialized Scientific Jury to award the scientific and educational degree "Doctor" to Nina Petrova Yordanova in the professional field 7.4. Public Health (Logopedics).

09 December 2024

Author of statement:

(Assoc. Prof. Miglena Simonska-Tsatsova, PhD)