

REVIEW

by prof. Dr Pelagia Terziyska, South-West University "Neofit Rilski"
of a dissertation work on the topic: „**Information and communication technologies in education of pupils with ADHD in the Greek language subject**”, for obtaining the educational and scientific degree "doctor" in Professional direction 1.2. Pedagogy (Special Pedagogy)

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Scientific supervisor: **prof. Neda Balkanska PhD**

This statement was prepared on the basis of order No. ПД-38-661/ 18.12.2023 of the Rector of Sofia University "St. Kliment Ohridski", as well as the decision of the scientific jury on the procedure.

General presentation of the procedure and the PhD student

Maria Manarioti is a full-time doctoral student in professional direction 1.2. Pedagogy (Special Pedagogy) with training in English at the Department of Special Pedagogy, Faculty of Educational Studies and the Arts of Sofia University "St. Kliment Ohridski".

The procedure and the presented set of documents is in accordance with the Law on the Development of the Academic Staff and the Rules for the Development of the Academic Staff of Sofia University.

A bachelor's degree in elementary education and a postgraduate qualification in special education allow Maria Manarioti to work consecutively since 2016 as a teacher for parallel support of children with mental disabilities and a child with emotional disorders; teacher in the integration department in a primary school; teacher for parallel support of children with autism spectrum disorder, as well as a child with hyperactivity. The education and experience gained from working with children with SEN motivated Maria Manarioti to continue her studies in the Doctoral

program "Special Pedagogy" of Sofia University "St. Kliment Ohridski" and to implement a research activity on problems of education of students with attention deficit hyperactivity disorder (ADHD).

Actuality of the topic

Attention deficit hyperactivity disorder has become one of the most common behavioural disorders in recent years. Its consequences affect not only the child's school performance and academic achievements but also peer relationships and social-emotional development. This necessitates the implementation of a complex and individual approach, the search and application of effective ways and means that can significantly influence the manifestations of the syndrome. In this context, the computer is a useful tool for teaching and learning to children with disabilities. It has a variety of functions and provides ample opportunities for their training and development. Therefore, Maria Manarioti's dissertation research aimed at using specific software to improve behaviour and performance in language learning of students with attention deficit hyperactivity disorder is necessary and significant for pedagogical theory and practice.

Based on researched literature sources and familiarization with the results of modern research in the field of education of children with ADHD, PhD student Manarioti draws attention to the need to look for opportunities to bring about change in their whining, as they often do not respond effectively to traditional strategies and teaching techniques. She emphasizes the influence of the computer on the behaviour of children with ADHD and the need to introduce ICT in their education. She points to the effectiveness of including appropriate educational software for these children.

Presentation of the dissertation work and evaluation of the content

The dissertation submitted for review contains a total of 211 pages, of which *121 main text* is structured in an introduction, 4 chapters and a conclusion. The 17-page bibliography includes titles in Greek and English, as well as online sources.

The appendix - texts for reading comprehension, tables and figures illustrating the results of the research is located on 73 pages.

Also included in the main text are tables and figures presenting the time of reporting in relation to the time of measurement and the presence of ADHD syndrome (separately for girls and boys); assessment of students' *attention* in relation to the time of measurement and the presence of ADHD syndrome (separately for girls and boys); assessment of students' *behaviour* in relation to the time of measurement and the presence of ADHD syndrome (separately for girls and boys).

The introduction briefly states the relevance of the chosen topic and presents the general and more specific purpose of the research. The essence of the experiment as a method of scientific research, its advantages over other methods, its importance in the behavioural sciences and its wide use by psychologists and psychoanalysts, sociologists, criminologists, etc. are described, according to the opinions of various authors. The three stages of the experiment conducted by doctoral student Manarioti are listed.

The literature review on the researched issues is done in the first two chapters. The views of various authors on the essence of attention deficit hyperactivity disorder, its aetiology, and its pathogenesis are briefly presented. Attention is directed to symptomatology, to accompanying disorders, to the most common problems that occur in reading and written expression. The importance of individual cognitive and behavioural psychotherapy, as well as family psychotherapy for dealing with the social, family and educational problems of children with ADHD, is indicated. Educational approaches proposed by various authors aimed at improving and training functional memory are presented, i.e. the short term that emerges as the core of these children's problem-solving and the role of parents and teachers in this process. Basic methodological approaches applied in language learning are described - traditional and structural, functional, communicative, text-centric, etc.;

the concept of literacy refers not only to the ability to read and write but also to a person's ability to function effectively in communication; the introduction of ICT in daily educational practice and its significance for improving the behaviour of children with ADHD, their self-esteem.

Examining the current trends in the education of students with ADHD, PhD student Manarioti presents opinions on language disorders and the development of language culture in these children. She points to research that shows children with ADHD have problems with language expression and perception, demonstrate poor performance on language tests, speech limitations, and difficulties in communication and social language communication. Doctoral student Manarioti emphasizes perceptions about the role of the teacher in dealing with adverse situations caused by students with ADHD and the importance of the level of awareness of teachers on issues related to the symptomatology, aetiology and especially the ways of teaching students with ADHD for the effectiveness of their education. She describes some measures that teachers can take to prevent children's social rejection and create an atmosphere that improves interaction among students in the classroom. Manarioti points out the opinions of authors defining the use of the computer as a significant opportunity to improve the cooperation of students and promote their proper communication and interaction, for personalized learning and teaching and computer-based learning for the implementation of direct feedback.

Chapter 3 and Chapter 4 present the research methodology, the analysis and the summary of the obtained results. The purpose, tasks, 4 hypotheses and methods of the research are correctly specified. The stages and the contingent of the experimental study are indicated - 100 students, divided into two groups: the experimental group consisting of 50 students with ADHD and the control group of 50 students without ADHD, who attend primary schools in the prefectures of Northern Greece. The students with HADV are from private institutions:

Thessaloniki - the Occupational Therapy Center, Rodopi, Xanthi - the Center for Creative Employment for Children, Kavala - the Speech Therapy Centre, the Center for Creative Employment for Children of Komotini and Seres - Language Centre.

In accordance with the formulated goal, one of the most popular software Scratch was used in primary and secondary schools in Greece. It is a block-based programming tool that is easy to use and learn. The exercises of this software are developed in an online environment.

A user profile was created (username: manarioti – password: manariotimail#1) and 4 projects were developed: Spelling Game; Multiple choice game for grades 1-2, grades 3-4 and grades 5-6. The code used in the games is presented. The settings for classes 1-2 are different from the settings for classes 3-4 and those for classes 5-6. All activities are accessible directly online from a standard web browser.

Analysis of the results included descriptive statistics and inferential statistics. The percentage of correct answers on the spelling exercises, the percentage of correct answers on the comprehension exercise, and the percentage of wrong answers on reading, attention and behaviour ratings of students with ADHD are presented. The statistical analysis confirms the first and second research hypotheses. Regarding the third hypothesis, it is proven that the use of ICT clearly improves the performance of students with ADHD, and significantly improves the attention and behaviour of these children with ADHD syndrome compared to children without ADHD syndrome. The fourth hypothesis is not confirmed.

The analysis of the results obtained from the conducted research gives reason to doctoral student Manarioti to summarize that for children with ADHD the use of computers in the educational process is an effective alternative educational strategy, on the one hand, because children with ADHD show skills to successfully handle computers, on the other hand, because symbols and images stimulate their interest.

However, the use of computer games is not indicated, as they have been observed to increase arousal and activity in children.

Evaluation of publications:

The publications are 4 in number and are on the topic of the dissertation work. All are published in the "Qualification and Good Pedagogical Practices" compendium. Part Five, NOVEMBER 2022 - JUNE 2023, ISBN 978-854-92368-4-2, not as the author - PhD candidate Manarioti in FINE MAGAZINE stated.

Abstract of the dissertation

The abstract presents the dissertation work in a summarized way. The content of the individual chapters is sufficiently informative. The author's summary conclusions, recommendations and contributions are highlighted.

Contributions:

I accept the contributions mentioned by PhD student Maria Manarioti, but I think it is good that contributions 2 and 3 should be formulated more briefly and united, contributions 4 and 5 – also.

Recommendations and notes on the dissertation:

- The majority of the introduction presents the views of various authors regarding the essence of the experiment as a method of scientific research, its advantages over other methods, its significance in the behavioral sciences, and its wide use by psychologists and psychoanalysts, sociologists, criminologists, etc. I believe that the place of this text is not in the introduction. The same text is repeated in the third chapter - pp. 72-73.
- In the theoretical part, when presenting the concepts of various authors, the point of view of the doctoral student is missing in many places.
- The author's publications on the subject of the dissertation must be correctly listed.

A question:

What recommendations can you give to teachers for the effective use of information and communication technologies in the language education of students with ADHD?

CONCLUSION:

Представеният дисертационен труд, разработен от докторант Мария Манариоти, отговаря на изискванията, които се предявяват към разработки за придобиването на образователната и научна степен „доктор”.

On the basis of the outlined merits of the work, the demonstrated skill for scientific research and the contributions of the author, I give a positive assessment and propose to the honorable Scientific jury to award the educational and scientific degree "doctor" to Maria Manarioti in the field of higher education: 1. Pedagogical sciences, professional direction 1.2. Pedagogy, doctoral program "Special Pedagogy".

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Author of the review:

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