

REVIEW

by Prof. Dr. Dr. Mira Tzvetkova-Arsova,

**Department of "Special Education" at the Faculty for Educational Studies and
the Arts of Sofia University "St. Kliment Ohridski"**

of a dissertation

**for awarding of the educational and scientific degree "doctor" (PhD) in a
scientific field 1.2. Pedagogy/Education (Special Education)**

Doctoral student: Maria Filippou Manarioti

**Title: "Information and communication technologies in education of pupils with ADHD in the
Greek language subject"**

Scientific supervisor: Prof. Dr. Neda Balkanska

1. Short description of the presented set of materials for the procedure

By order of the Rector of Sofia University "St. Kliment Ohridski" No. 38-661/18.12.2023 I have been appointed as a member of the Sciences Committee/jury for the procedure for conducting the defense of the doctoral dissertation of Maria Filippou Manarioti, a full-time doctoral student in special education in English language at the Department of "Special Education" at the Faculty for Educational Studies and the Arts of Sofia University "St. Kliment Ohridski" with scientific supervisor Prof. Dr. Neda Balkanska.

The set of materials on electronic media submitted to me for review includes the necessary documents, including the full text of the dissertation in English language, the Autoreferat (Abstract) in Bulgarian language, CV, publications on the topic of the dissertation, etc.

2. Short biographical data for the doctoral student

Maria Manarioti holds a BA in Preschool Pedagogy from the Democritus University of Thrace, graduating in 2012.

She holds an MA in Special Education from the University of Nicosia in Cyprus from 2015.

She was enrolled as a full-time doctoral student in special education in English language at the Faculty for Educational Studies and the Arts of Sofia University "St. Kliment Ohridski" in the department of special education in 2018 with a study period of 3 years under the scientific supervision of Prof. Neda Balkanska. She was dismissed with the right of defense in July 2021.

Maria Manarioti has worked over the years as a special educator in various educational institutions in Greece, most recently in a general school in Samos.

3. Relevance of the title and of the topic

The title of Maria Manarioti's dissertation is well chosen, it is relevant and significant for the theory and practice. It combines several scientific fields – on the one hand, the education of children and students with attention deficit hyperactivity disorder (ADHD) with an emphasis on mastering the Greek language, and on the other hand, information and communication technologies and their application in the modern conditions of the educational process, with an implementation in inclusive environment.

4. Characteristics and evaluation of the structure and organization of the doctoral dissertation

The dissertation of Maria Manarioti has a total volume of 211 pages, of which the actual text occupies 121 pages. It has the following structure: two theoretical chapters, one chapter with design of the research, one chapter with analysis of the data and results, conclusion, contributions, publications, bibliography, appendix. The ratio between the theoretical part, the design of the research and the analysis of the results is approximately 65:12:40 pages.

I notice that the year 2022 is written on the title page of the full text in English language, the year 2021 on the title page of the Autoreferat (Abstract), and not the current year of the defence.

The introduction is quite short, but it nicely introduces the main topic of the dissertation.

The first of the two theoretical chapters is devoted to the attention deficit hyperactivity disorder (ADHD). Within 8 paragraphs, this chapter offers definitions of ADHD, causes of occurrence, therapeutic approaches, literacy training, use of technology in the learning process with a focus on language teaching in Greek. The theoretical presentation in this chapter is good, organized and appropriately presents a modern and up-to-date picture of the nature of the attention deficit hyperactivity disorder (ADHD) and Greek language teaching in the primary school level in Greece. There is a good knowledge of the references on the subject and their skilful presentation in a connected and structured way.

The second chapter concentrates on the modern trends in the education of students with attention deficit hyperactivity disorder (ADHD). It describes in 6 paragraphs the language development of these children, the awareness and knowledge of the teachers in educating them properly, the educational technologies as a tool for learning, describes various types of new technologies, emphasizes on the inclusive education of students with SEN and analyzes the benefits of implementing technology into their learning process with a focus on teaching Greek language.

Both theoretical chapters are well-constructed, logical and consistently analyse the researched topic.

The third chapter presents the design of the research. The main goal is well defined. Four hypotheses are raised, which correspond well with the main goal and with the overall design of the study. Participants in the research are a total of 100 students of primary school age from several towns and cities in Greece (Thessaloniki, Kavala, Serres, Xanthi, Komotini), who study in various educational settings, mostly private. They were divided into a control group of 50 students without attention deficit hyperactivity disorder (ADHD) and an experimental group of 50 children with ADHD.

Of all the students, 76 were boys and 24 were girls. The research was built in three stages: in the first stage the current level of performance of all students was evaluated (pretest), in the second stage, various computer games aimed at language development were applied to the students with ADHD - mainly to spelling, reading, understanding, and in the third stage, the level of performance of all students (posttest) was evaluated once again, after the work carried out in the second phase. The actual research (teaching experiment) was conducted individually with each child with ADHD in a quiet and relaxed environment in 2020. The overall study is a classical learning experiment with a pretest and posttest, which is a good and reliable decision and solution for establishing the influence of the applied computer games in the learning process and their real effect on the experimental group of students with ADHD.

The fourth chapter offers analysis of the obtained results. Statistical analysis of the collected data was carried out with the program SPSS-version 22.0. Through tables, graphs and text, a good and in-depth quantitative and qualitative analysis of the performance of the two groups of students was made, with an emphasis on the effect of the application of various computer games aimed at developing language skills in Greek language among students with ADHD. Different aspects of language work - reading skills, comprehension, etc. - have been analyzed separately. A three-way ANOVA was used to identify multiple differences between gender, classes, differences were sought regarding the effect of time and the effect on various activities performed: percentage of correct spelling of letters and words, comprehension, reading, attention on task, behaviors. The differences in the performance of the students with ADHD before and after the experiment were detected. Their performance was compared with the group of students without ADHD. The analysis is good, systematic and consistent. Reliable methods were used to establish the level of performance and to detect and compare the results before and after the experimental work.

The analysis is followed by a Discussion which, within just two pages, compares its own results with results of other similar studies. Here Maria F. Manarioti comes to the conclusion that the first three hypotheses are confirmed as a result of the analysis, and the fourth hypothesis is rejected and is not confirmed.

On the same page after the Discussion, there is a Conclusion, in which 14 recommendations are made for the future use of information and communication technologies in the educational process at an international level with proposals such as: creation of platforms,

opening of a European center, international data exchange, expansion of international teacher training opportunities, etc. These recommendations are quite broadly formulated and without concrete practical value.

No General conclusions were formulated as short statements coming from the Analysis and summarizing the main findings from the research, despite the recommendation made during the internal defense.

Approximately 160-170 references, mostly in English language, are listed in the Reference part. There are citations from the last 5 years (respectively from the years 2019, 2020).

After the References, there are quite a few appendices, which cover the next 70 pages. Page 160 is left blank.

5. Contributions to the theory and practice

The contributions that Maria Manarioti formulated are six. They are not divided into groups with scientific-theoretical and practical nature. Contributions 2, 3, 4 and 5 have the highest value. It would be good to separate the contributions on a separate page and separate them by type.

6. Evaluation of publications on the topic of the dissertation

In the original and complete text of Maria Manarioti's dissertation in English, four publications are listed, the titles of which are directly related to the topic of the dissertation, and I accept them as such. All of them are single-authored and are from the proceedings of doctoral students of the Faculty of educational Studies and the Arts from November 2022, respectively placed on pages 779, 752, 821 and 768. In the Autoreferat (Abstract), publications with the same titles are listed, but from different years and in different journals. There is a discrepancy in the publications described and listed in the two texts.

7. Autoreferat (Abstract)

The Autoreferat (Abstract) reflects well in a short version the overall content and text of the dissertation. It is in a volume of 50 pages. The Bulgarian translation is good. It is noticeable here that the introduction is much longer than the one in the original text of the dissertation in English. The pages in the contents of the Autoreferat (Abstract) do not correspond to the actual pages in its text.

8. Questions for the PhD student:

1. How do you see and evaluate the readiness and the knowledge of the general education teachers in Greece to work and directly apply your kit of proposed computer games in the learning process of students with attention deficit hyperactivity disorder (ADHD) in order to improve their Greek language skills related to reading, comprehension, attention, etc.?
2. How do you intend to promote the results of your own research in your home country - Greece?

Conclusion:

The dissertation of Maria Filipos Manarioti with title 'Information and communication technologies in education of pupils with ADHD in the Greek language subject' with scientific supervisor Prof. Dr. Neda Balkanska contains scientific-theoretical statements and scientific-applied results that are a contribution to the science and practice of special education.

The dissertation meets the requirements of the regulations in Bulgaria stated by the Law of the Development of the Academic Staff and, in particular, the requirements of the Regulations of Sofia University "St. Kliment Ohridski" for the acquisition of scientific degrees, in terms of significant topic, structure, organization, compliance. The dissertation presents an interesting and valuable research with a large group of primary school-age students in Greece, divided into control and experimental groups, and shows that the doctoral student Maria Manarioti has a deep theoretical knowledge of the topic, visible in the theoretical chapters, has qualities and skills for planning and conducting scientific research, as well as skills for analysis and interpretation of scientific data and results, in a scientific field 1.2. Pedagogy/Education (Special Education).

Based on everything stated above, I give a positive assessment and evaluation to the dissertation and the Autoreferat (Abstract), and I propose to the esteemed scientific committee/jury to award the

educational and scientific degree "Doctor" (PhD) to Maria Filippas Manarioti in professional field 1.2. Pedagogy (Special Education).

Sofia, January 22, 2024

Sincerely:

(Prof. Dr. Dr. Mira Tzvetkova-Arsova)