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**AUTOREFERATE
OF
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**HOLISTIC APPROACH TO THE DEVELOPMENT OF
LEARNING SKILLS OF STUDENTS WITH SPECIAL
EDUCATIONAL NEEDS**

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INTRODUCTION

The dissertation research has based on Holistic approach in education, the new global view of education that changes traditional positions in science and practice. It may provide a stepping-stone to the real world, offering many different and proper educational methods and techniques, life planning and personal development. It can meet the needs of all types of learners, being a source of fulfillment and gratification for teachers, parents and students in an attempt to prepare future citizens who will contribute a concern and mindfulness for others and their communities (Bhardwaj, 2016).

Observations on current educational practices show a number of shortcomings of the school environment, related to difficulties in identifying the primary sources of each educational problem, due to the length of the necessary procedures. Analyzes of the current educational conditions bring out the need for synchronizing responsibilities. Better planning and organization of the school and social environment in which students with SEN live is of paramount importance. An inclusive environment with flexible management of all systems that are close to the subsystems of students with SEN and influence their academic development is successful. A generalization can be made about the realization of a multi-component educational preparation that is "on time" for each interaction.

The current study falls within the subject area of reforming special pedagogy, which through the application of a holistic approach asserts its important role in the lives of students with SEN. However, the review of specialized literature shows that empirical studies in this conceptual framework do not have sufficiently convincing arguments about which unit (domain) of the system of the holistic approach is leading, which is the weakest, where there is progress and what are the discrepancies with the expectations of the theoretical model. Quantitative studies are limited, as are discussions of practical issues arising from the changing interaction between the internal biological, cognitive, emotional and behavioral characteristics of adolescents with learning disabilities and socio-pedagogical factors (Popzlateva, 2017). The structure of special educational needs in mass secondary schools and the parameters for their distribution into categories and subcategories have insufficiently clarified. The discussion of priorities and factors of the successful professional activity of the special pedagogue in the secondary school has not yet moved to the focus. The conducted analyzes outline a need for a

better differentiation of his professional roles in primary and secondary school, directly resulting from the qualitatively different specificity of the difficulties and the ways to deal with them in the different age groups.

The holistic approach maps all areas that affect the school performance of students with special educational needs, but the focus is on the best possible fit into the structures of mainstream education. Leading in the international literature are the discussions and analyzes of empirical research results, which cover the topics of the role of parental participation, the role of the educational system, heterogeneous problems in teaching approaches, the national educational policy, socio-pedagogical factors in the "working and social environment" system to parents and teachers.

In the *first chapter* of the dissertation, scientific debates have systematized on key positions in the concept of a holistic approach to child-adolescent development, education, diagnostics and therapeutic strategies. In the paradigm of constructivist theories and inclusive education, the questions about the specific manifestations of special educational needs (SEN) in the period of adolescence, about the impact of policies and special circumstances on current reforms to affirm an inclusive type of education, the family environment, about their effects x on adolescent development and learning. The holistic approach assigns a key role in the management of the educational needs of children and the needs of their families to the special educator, which conveys a special importance to the problem of its strengthening. Building a culture for joint teaching and learning is one of the important ways in building the professional readiness of the special educator to overcome the expected multitude and variety of obstacles that students with SEN encounter in inclusive processes to their social and educational environments.

The *second chapter* of the dissertation attempts to answer the research questions identified by the author, by modeling and organizing its own empirical research. The objectivity of the scientific summaries and findings has guaranteed by the applied scientifically based methodology, the use of a representative sample of special education teachers, a random sample of adolescents with SEN evaluated by them, and by the developed standardized research toolkit with a corresponding choice of statistical methods. The aim of the empirical study is to investigate the compact and differentiated influence of the interaction between internal (biological, cognitive, emotional and behavioral) factors and external (familial and socio-pedagogical) factors on the educational progress of students with SEN in the inclusive environment of the mass secondary school. The focus is on the essential characteristics of the interactions between the main participants in the education of students with SEN from

secondary mass schools, as an indicator of the implementation of a holistic approach. The main research questions cover the readiness of the modern education system to manage and solve learning problems arising from the dynamic interaction between biological, cognitive, emotional, behavioral characteristics of the student, the school environment, parental involvement and the wider social environment. We has interested in the specific influences of this interaction on the learning competence of students with SEN in the mainstream middle school class. The focus is on identifying and evaluating progress in educational reforms, but also on prospects for further improvements in the basic conditions for quality education of students with SEN.

The choice of quantitative strategies for collecting empirical data in the field of special education is a complicated problem, and reports of such studies are still rare. In the dissertation research, the applied quantitative strategy aims at extracting information about the influence of significant factors on the effectiveness of teaching, learning and the adequate management of inclusive environments. In accordance with this, a standardized questionnaire for special educators had developed to collect empirical arguments in support of the author's scientific thesis and a differentiated assessment of the readiness of the educational, parental and social environment in a holistic way to cover the needs of students with atypical biological, behavioral, emotional and cognitive characteristics. The questionnaire covers the diversity of interactions that occur in the different aspects of the holistic paradigm in an inclusive environment, presenting it as a useful educational model for meeting the special educational needs of the secondary school age.

The study has conducted during the academic year 2022-2023 with 100 special education teachers from different prefectures of Greece, who assessed 200 students with SEN from the middle course of mainstream schools.

The obtained results have analyzed and discussed in the *third chapter* of the dissertation. They have presented in the context of the emotional-behavioral profile of adolescents with SEN, their achievements in mainstream school, the characteristics of their family, school and social environment, the differential influence of internal factors and specific socio-pedagogical factors on behavior and learning.

The discussion of the empirical information substantiates the main points in the previously raised scientific hypotheses. It also reveals new data on the interrelationships between the professional preparation of special educators in the secondary school and the real conditions in which support the learning of students with SEN and create a climate of cooperation with teachers and other students in the relevant educational unit. The study

registered multiple roles of special educators in the secondary school that require conscientiousness and a high sense of responsibility, but also clearly outlined a need for their strengthening.

In the situation of the reforming educational system, the results allow to derive scientific generalizations and specific recommendations for improvement in Greece and other EU countries, despite the fact that there are some limitations in the information sources of the dissertation work. In the era of priority digitalization, the need for flexibility, balance of contradictions, vigilance for violated students' rights, cooperation in the interdisciplinary team between special education teachers, mainstream teachers, parents, etc., is increasing.

CHAPTER 1

HOLISTIC APPROACH TO THE DEVELOPMENT OF LEARNING SKILLS OF STUDENTS WITH SPECIAL EDUCATIONAL NEEDS

1.1 Concept of holistic approach: origins and Constructivist model

In an era of globalization, Education and more specifically, the particularly sensitive area of Special education, has directly and indirectly affected by socio-economic conditions that prevail. The theoretical part deeply discusses the main theses of the holistic approach – paradigm in inclusive Special Education, a new global view of education and development that changes traditional positions in science and practice. It focuses on all types of interactions that the Holistic paradigm concludes and specifies the actual scientific and practical problems that arise in various aspects of Holistic paradigm in inclusive settings. There is a center that leads to the basic scientific thoughts of the researcher and argues these middles with scientific facts from conducted empirical studies. It presents what Holistic approach is and its origins. It continues with a presentation of the constructivist model that holistic approach is based on as well as factors that holistic approach deals with. It also focuses on mainstreaming of the holistic approach and the way learning has achieved. Besides, it presents educational models in holistic approach, its orientation and examples of inclusion in real school environment. Finally, it includes a mapping of the components of holistic approach.

Holistic approach is not limited to those internal biological, cognitive, emotional, behavioral factors and characteristics of students with SEN but also includes social influences from family, school and society environment these students with SEN live and interact. All those factors reflect each other having impact on the progress of these students that could be positive, negative, direct or indirect. The basic dimension of holistic education includes an inclusive movement and a comprehensive approach to teaching where educators seek to address all the emotional, social, ethical, and academic needs of students in an inclusive learning format that aim to educate all parts of the student who can be seen as part of the whole (Forbes, 2003). In the holistic framework explicitness of classroom rules, procedures, and expectations for students with SEN are important. The holistic concept in special education is the philosophy of educating the whole person and struggle to improve students' outcomes (Miller, 1992; 2000; Krippner,1991; 2011; Lovat et al., 2010; Mahmoudi et al., 2012; Mehta, 2020; Yan et al, 2021).

There are four ‘Pillars of Learning’ in Holistic Education (UNESCO, 1996). The first pillar is Learning to Learn (for skills such as paying attention, listening, perceiving, and developing curiosity, intuitiveness, and creativity develop concentration, memory skills and ability to think). The second pillar is Learning to Do (adapt to the needs of work and ability to work in a team, along with the strategic use of knowledge to resolve problems and make rational decisions in generating quality goods and services). Third pillar is Learning to Live Together (live and cooperate with other people). Fourth pillar Learning to Be (learning to be human, through acquisition of knowledge, skills and values conducive to personality development in its intellectual, moral, cultural and physical dimensions). This implies a curriculum aiming at cultivating qualities of imagination and creativity; acquiring universally shared human values. It is related to richness of personality (UNESCO, 1996; Mahmoudi et al., 2012).

1.2 Special Educational Needs and adolescence

It continues with the role communication and psychology of atypical development and focuses on framework of inclusive education and on general characteristics of adolescence that teenagers with SEN have. It places their problems in the context of the holistic approach to which education systems are being reformed and discusses what happens in adolescence to all children at risk of SEN (Losada-Puente, Muñoz-Cantero & Almeida (2017; Myklebust & Myklebust, 2017; Parise, Canzi, Olivari & Ferrari, 2019; Povedano-Diaz et al., 2020).

1.3 Reflection of Politics on Inclusive Education

Third part has based on the theoretical framework of inclusion in secondary education in international level (Ainscow, Slee & Best, 2019). It focuses on reflection of Politics on Inclusive education presenting the example of Greek educational and national policy. Besides, it shows Greek legislation (Law 3699/2008) on special education and its reflection on the reality of schools with objections. It discusses the effectiveness of Greek mainstream inclusive settings (Lampropoulou-Padeliadou, 1995; Pandeliadou, 2004; Anastasiou- Polychronopoulou, 2009; Antoniou, Polychroni & Kotroni, 2009; Kourkoutas, Stavrou & Loizidou, 2017; Tryfon et al.,2021; Mavropalias, Alevriadou & Rachanioti, 2021) and finishes with suggestions for the future of Greek educational reality.

1.4 Reflection of special social circumstances on Inclusive education

Theoretical framework focuses more deeply, in a further orientation, on special social circumstances of Inclusive education. It presents the example of COVID-19 that affected and influenced social, family and school environment. It continues with the side effects of distance learning for students with SEN (Azoulay, 2020; Ebadi & Heidarlanlu, 2020; Tadesse et al., 2020; Tsibidaki, 2021; 2020; Pokhrel & Chhetri, 2021), distance teaching styles (Parmigiani et al., 2020; Toseeb et al., 2020; (Schleicher, 2020) and the difficulties of special education teachers (families (Tzifopoulos, 2020; Tadesse & Muluye, 2020; Lohr et al., 2021). It finishes with arguments as far as it concerns improvement of distant inclusive education (Yazcayir & Gurgur, 2021; Pokhrel & Chhetri, 2021; Scherer et al., 2021; Clarke & Done, 2021; Ebadi & Heidarlanlu, 2020; Bank, 2020).

1.5 Parental environment and adolescents with SEN

Besides, this chapter has focused on the fundamental system that learners with SEN first grow up, live and learn and this is their family and what happens in this environment during adolescence to all children at risk of SEN is discussed. It presents a review of the international literature on the main theses of the holistic approach – paradigm on parental involvement (Lück, 2015) and its importance to student's learning and behavioral development. Importance has given on the role of early intervention of SEN (Sallows & Graupner, 2005; Gena & Galanis, 2007) and parents' training support (Reffert, 2008; Vakil et al., 2009). Emphasis has given on emotion regulation and family history (Lightfoot, Cole & Cole, 2014; Gross, 2002 Morris, Silk, Steinberg, Myers & Robinson, 2007; Yap, Allen & Ladouceur, 2008) effects of parenting styles in adolescence (Kafetsios, 2003; Frye & Garber, 2005; Yap et al, 2008; Ryan & Deci, 2008; Roth, Vansteenkiste & Ryan, 2019), family problems and their reflection to adolescence (Giannakopoulos et al., 2009; Faraone et al., 2005; Kooij et al., 2010; Palmer, 2007) cultural values of parents and social conscience (Demir & Kok , 2012; Lück, 2014; Halpin, Moore, Edwards, George & Jones, 2000) and parents as role models for adolescents with SEN (Boveda & Aronson, 2019). It concludes with the relationship between parental involvement and school performance as a fundamental dimension of the school-family relationship and highlights the crucial role that parents play in their children performance (Epstein, 1995; Avdali, 1989; Hoover-Dempsey et al., 2005; Brantdt, 2006; Gonida & Urban, 2007; Larocque, Kleiman & Darling, 2011; Penterri & Petrogiannis, 2013; Li, Hu, Ge & Auden, 2019; Otani, 2019).

1.6 Inclusion and School Environment

Furthermore, theoretical framework deals with the environment of school. It includes diagnosis and assessment of disabilities (Попзлатева, 2020;) and gives emphasis on the role of transition to secondary school for students with SEN (Winn & Hay, 2009; McCoy, Shevlin & Rose, 2020; Maras & Aveling, 2006; Hughes et al, 2013; Bagnall et al, 2021). On the other hand, it discusses the relation of students with SEN with peers at secondary mainstream schools, ways of improvement of communication in inclusive settings and generally discusses attitudes of teachers towards inclusion. Besides, it discusses crucial elements for success in inclusive settings that create a holistic learning environment, modifications when teaching in inclusive settings and multisensory teaching methods. At the end, it finishes with emphasizing on the importance of the special educational teachers with specific qualifications and specialization (Chao et al., 2017) as mediators of the educational procedure and managers of a dynamic interaction.

The proposed discussions and analyzes of contemporary theoretical and empirical studies in the international literature outline the importance of parental involvement, national education policies, comprehensive reforms in the education system, innovative teaching strategies and the whole complex of interacting socio-pedagogical factors that affect developmental progress and school performance of students with SEN. Special educators are a major focus of special research to optimize the holistic approach in secondary education of students with SEN through the identification and management of educational and family needs. A global view of the student with SEN reveals problems arising from educational practices based on old educational policies. Parents often remain locked in dominant concerns about their own mentality, lifestyle, and financial problems. The educational reality of the student hardly crosses the borders of traditionally segregated educational spaces, with educational practices, daily activities and social dispositions imposed over time. The center of gravity in applying a holistic approach to the development and education of students with SEN in the adolescent period is centered on strengthening the professional role of the special educator and building a culture of collaborative learning to meet all the many obstacles that are faced standing and must decide in favor of students with SEN.

The theoretical part is an attempt to interpret the holistic paradigm in special pedagogy and educational practices through a logically coherent scope of significant scientific problems and through a critical attitude towards them. Students with special educational needs are at the center of interest, and for their better framing in the special education structures of the mass

secondary school, we consider it particularly important to cover all the mapped areas in the holistic approach to their individual development, learning and school achievements.

CHAPTER 2

METHODOLOGY OF THE RESEARCH

2.1. Subject, Object and Scientific These

The subject of the dissertation research is the holistic approach to the development of students with special educational needs and it fits into the scientific problematics of inclusive education of Special Pedagogy with its actively reforming practices. This complex philosophy points to the potential of the parental, educational and social system to develop students with SEN's learning skills and readiness for independent living. The holistic approach covers all the internal biological, cognitive, emotional, behavioral factors and characteristics of the student, which in interaction with the socio-pedagogical factors of the family, school and society influence the general educational progress.

The object of research is the effects of the psychological, educational and social situation of students with SEN in the middle course of the mainstream school on their learning skills

According to the review of existing research, the holistic paradigm in education has not found convincing empirical arguments about which unit (domain) in the reforming educational system is leading, where there is progress and where the main weaknesses have compared to the theoretical model. Practical problems arising from the dynamic age-related change of the system of biological, cognitive, emotional, behavioral characteristics of adolescents with SEN are insufficiently covered. The questions about variations in the development of individual categories of students with SEN educated in mass secondary schools have poorly clarified. Of interest is the question of priorities and factors for successful professional work of the special pedagogue in secondary school, as well as the differences between his functions in primary and secondary school.

The empirical study examines essential characteristics of the interactions between the main participants in an educational process aimed at applying a holistic approach to students with SEN in mass secondary schools. The main research thesis is that in the period of adolescence (secondary school), qualitative changes occur both in biological, cognitive and personal characteristics of students with SEN, and in the characteristics of their socio-

pedagogical development situation. The qualitative change in the interactions of these factors determines significant changes in the opportunities and limitations for acquiring new learning skills for adolescents with SEN in the inclusive environment of the general education school. The optimal implementation of the holistic approach in general and differentiated knowledge and management of the dynamic interrelationships between internal and external determinants of the development and learning of students with SEN.

2.2. Methodological strategy, Research Aim, Objectives and Hypotheses

Methodological strategy

In order to argue the scientific thesis and illuminate the research questions, a choice of synchronous design with quantitative strategy for collecting empirical facts and their processing has made.

The quantitative design implies the formation of a representative sample of reliable informants and the preparation of a standardized research instrument. Implementation of a quantitative survey allows determining the degree of generalization of the findings (Bryman, 2017). In the present study, the External Assessment Method has applied with a representative sample of special educators, who work in inclusive settings of secondary mainstream schools and teach adolescent students with SEN. They evaluate the internal and external determinants of learning competence in standardized conditions and according to the parameters of a structured rating scale (questionnaire).

The researcher identifies this target group for collection of information about educational conditions and processes, taking into account the experience and position of special educators' in modern educational conditions. This gives the opportunity for critically evaluating the Inclusion Support program on a holistic basis as it has implemented in mainstream secondary schools with adolescent students. The views of special educators have accepted as a reliable source in the study of the impact of school-parents-society on learning competence of students and all those factors that depend on special educator successful professional work in the secondary school.

Research Aim and Objectives

The research aims to investigate compact and differential influence of interaction between the internal biological, cognitive, emotional, behavioral factors, the external family, socio-pedagogical factors on learning and the educational progress of adolescent students with SEN in inclusive settings of secondary mainstream schools.

The Aim of the research has decomposed in following objectives:

- ✚ To study the basic biological, cognitive, emotional, behavioral characteristics of students-adolescents with SEN that attend inclusive settings in mainstream secondary schools of Greece;
- ✚ To study the influence of internal factors (biological, cognitive, emotional, behavioral characteristics) on learning competence of adolescent students with SEN that attend inclusive classrooms;
- ✚ To study the influence of socio-pedagogical factors on learning competence of adolescent students with SEN that attend inclusive classrooms;
- ✚ To study the patterns of interactions between internal and socio-pedagogical factors on learning competence of adolescent students with SEN that attend inclusive classrooms.

Research hypotheses

In a scientific study, researchers seek for dependencies and relationships between different factors. This reflects in scientific hypotheses that they try to prove or disprove. As the holistic approach is not limited to the internal factors like biological, cognitive and emotional-behavioral characteristics but also includes social influences and environment that interact with each other, specific constellations of factors with quantitative measures have differentiated into nuclei have sought. The researcher predicts through generalized hypotheses, which factors and in which constellations could have a positive/negative effect on the academic performance of adolescents with SEN and examines them. Based on the theoretical framework, the research questions and the main purpose of the research, the following scientific hypotheses have formulated:

Hypothesis N1 (H1): We assume that in the period of adolescence *within-group differences* in behavior and learning competence in the clinically distinct categories SEN greatly increase and the influence of the "type of disability" has limited greatly. We expect that at this age stage of the development, the students with SEN fall into more global categories based on reorganization of the inner connections between new physical status – socioemotional status– social adaptations - learning competence. We assume that leading clinical symptoms of disorders in this age has more limited influence on learning competence in comparison with gender factor and socioemotional characteristic of students.

Hypothesis N2 (H2): It has expected that constellation of *internal factors* (biological, cognitive, emotional, behavioral characteristics) *has significant but differential influence* on learning competence of adolescent students with SEN in inclusive settings.

Hypothesis N3 (H3): It has expected that *specific socio-pedagogical factors* affect

significantly, but *differently* basic components in learning competence of adolescent students with SEN in inclusive settings.

Hypothesis N4 (H4) : It has expected that types of *interaction* between internal and socio-pedagogical factors have significant impact on learning competence and *distribute the sample of* adolescent students with SEN *in specific categories*.

These basic research hypotheses have checked by statistical inference methods.

2.3 The Sample and Data collection tool

Sample

The empirical data in the present study have collected by selecting an independent sample of 100 special educators (special education teachers) who work in secondary mainstream schools. Each of them provides an expert assessment for two of their students, which forms a second independent sample of 200 students with SEN from inclusive classes of mass secondary schools and lyceums in Greece. Efforts have made to cover the main parts of the Greek territory, the major civic centers, cities, remote villages and islands. To collect empirical information about the factors in the learning of students with SEN according to the model of holistic education, an author's toolkit structured assessment scale has developed: "Questionnaire for inclusion of students with special educational needs in secondary mass schools (for special pedagogues/resource teachers)".

Learning skills are systematized into four categories and, according to statistical terminology, are defined as dependent variables: Learning to learn; Let's learn to do; To learn to live; Let's learn to live together.

Factors that influence the state of learning skills (*independent variables*) have divided into the categories of subjective and objective.

Subjective factors include the following subgroups:

- ✚ The first group relates to the personality of the student with SEN, the knowledge and attitudes towards it of special pedagogic teachers, mainstream teachers, classmates and parents.
- ✚ The second group of subjective factors related to the knowledge and attitudes of teachers, parents and classmates towards the potential of students with SEN for learning to master the 4 categories of skills in the learning process and life situations, as well as the student himself;

- ✚ A third group of subjective factors is related to the knowledge and skills of educators to organize the educational environment and joint educational activity in the school class, taking into account the individual differences of students.

Objective factors have represented by policies, material base, organization of interaction between teachers, other specialists and parents; teachers' pedagogical experience, educational qualification, family, etc.

"Questionnaire for inclusion of students with special educational needs in secondary mass schools (for special pedagogues/resource teachers)" has developed in four parts with 123 questions (items). The first part concerns the collection of demographic data for special education teachers who work in the inclusive environment of mainstream secondary schools in Greece. It includes 6 questions - gender, level of specialization in Special Education, total work experience in special education, working relationship with the school, duration of work in the same school, number of students with SEN supported during the current school year. The second part concerns demographic characteristics of students with SEN – gender, age, grade, school level and diagnostic category. The information has collected by the special education teachers who assess two of their students with SEN. The third part of the questionnaire has aimed at the personal characteristics and school achievements of students with SEN.

To derive the personality characteristics in the context of the emotional-behavioral sphere, a part of an internationally recognized psychological instrument - "Achenbach's Behavior Assessment System" (ASBA), in Greek standardization - was used. The summary scale for expert evaluations of teachers of students aged 11-18 years - "Teacher Report Form" (TRF, Achenbach, 2013) has selected. The standardized questionnaire offers norms for categorizing six independent scales in each student's psychological profile as falling on the normative, borderline, or clinical spectrum.

The content of the standardized "Teacher Report Form" (TRF) for adolescents aged 11-18 years includes six rating scales: Emotional problems, Anxiety problems, Physical problems, Attention problems, Oppositional/defiant behavior problems, Conductive (antisocial) behavioral problems.

The Emotional Problems scale (Questions C1-C10) covers the assessment of statements about lack of satisfaction, the appearance of fatigue, sadness, feelings of unhappiness, etc., which are mainly from the depressive spectrum of affective disorders. Specific manifestations of emotional instability are included - excessive crying, lack of self-esteem, feelings of guilt, apathy, suicidal tendencies and lack of energy.

The Anxiety Scale (Questions C11-C16) covers the assessment of statements about manifestations of excessive anxiety - lack of attachment to adults, phobic fear of situations, places and even certain animals, as well as nervousness and fear of school.

The Physical Problems scale (Questions C17-C23) includes a high frequency of somatic problems - pain in various areas, headache, nausea, abdominal pain, eye problems, skin problems, etc., for which very often there is no objective reason.

The Attention Problems scale (Questions C24-C35) has divided into two subdomains – inattention symptoms and hyperactivity-impulsivity symptoms. Manifestations of inattention refer to whether students finish what they start, whether they can focus on something for a long time, to distractions and difficulty following instructions. The symptomatology of hyperactivity and impulsivity has assessed by statements about whether students can remain calm or constantly move parts of their body, whether they have problems communicating with other students, tendency to follow order in dialogue, whether there are indications of continuous talking and nervousness.

The Oppositional/Challenging Problems scale (Questions C36-C40) assesses students' dominant oppositional behavior. It has assessed whether students are too much reactive and contradict to teachers or whether they are disobedient, stubborn and have outbursts of anger.

The Behavioral Problems Scale (Questions C41-C53) assesses statements about acts of aggression, tendency to destroy other people's objects, lack of discomfort with misbehaving with others, breaking school rules, getting into fights and conflicts with violent children, irresponsible behavior, tendency to lie and unexcused absence from school, as well as more extreme behaviors of theft, assault, swearing and threats.

Students' academic progress has assessed through another set of 21 statements (Questions C54-C74), structured into 3 subcategories and rated on a Likert scale. The first subcategory (Questions C54-C56) refers to skills in key school competences - reading a passage, satisfactory written production and legible handwriting. The second subcategory (Questions C57-C68) concerns the general performance of students at school or active participation in learning - participation in class, ability to solve tasks independently and the ability to cooperate with others; ability to complete timed exercises and assignments, satisfactory performance in final exams, and a general impression of "good-bad" students. The student's progress in cognitive skills, the ability to manage his emotional problems and his self-esteem have examined. The third subcategory covers questions about progress in specific academic subjects. The teacher's opinion on specific factors in the school performance of students and the extent

to which the biological, cognitive and behavioral characteristics of students have a significant influence on the student's learning activities have investigated.

In the area of learning skills and school achievement, a Likert scale has also applied for evaluation.

The fourth part of the "Questionnaire on Inclusion of Students with SEN in Secondary Mass Schools" had developed in order to assess the quality of the supportive environment in the life of the student with SEN. A system of 31 questions had developed, which have aimed at the influence of socio-pedagogical factors (educational environment, family and social environment) on the learning ability and behavior of students with SEN. The distribution is in three subcategories. The first group consists of 9 questions (Questions D75-D83) and investigates the family support of the student with SEN - characteristics of parents, educational qualification and psychological climate, contact of parents with teachers and school services for psychological support, participation in educational activities and problems of school management, knowledge of individual characteristics of the child. The second group of 19 questions (Questions D84-D102) concerns the resources of the school unit and the general education system: A) Availability of adequate human resources (Questions 84-92, 96-99); B) Teachers' satisfaction with teaching tools and methods (Questions 93-95, 100-102). The last group of 10 questions comments on the social environment in which students with SEN live. Three of the statements (D103-D106) concern possible negative effects on the student's progress of the social environment, living in a remote or crowded geographical area, poor climatic conditions, prejudice of the social environment and social isolation of the student due to his uniqueness. The assessment of the available supportive social environment (statements D107, D108, D110) is made in the context of whether the student's closed social environment is supportive, whether there is an opportunity to integrate the student into a wider range of activities and whether there are social services and services for mental health to meet his needs (biological, cognitive, emotional, behavioral). Three more questions elicit data on the student's possible supportive environment after completing secondary education. More specifically, questions had asked about the availability of suitable conditions for the student's development as an independent adult, about the possibility of people with disabilities to work and about the availability of sufficient financial resources to achieve social integration of students with SEN.

2.4 Research process and statistical procedures

The research has prepared and conducted during the academic year 2022-2023. In the pilot study with a group of 10 special educators, the constructed research tool was tested, its

functionality in terms of the terminology used and accessibility of the content for understanding by the respondents. After refining, updating the wording and enriching it with some more adequate ones, the form of the guide and the details of the research instrument itself were finally completed.

The questionnaire has provided to the respondents electronically through the Google Forms online questionnaire tool, in order to achieve a larger volume and representativeness of the sample of teachers, as well as speed in the collection and processing of information, and even lower financial costs. Applied data collection is particularly effective for highly educated populations and members of special categories, such as site users (Lampiri, 1995). Permission to participate in the study has sought from principals through emails sent to each school and to special education teachers. There are cases of teachers informed by social media about special education issues. Special education teachers all over Greece fill out the e-questionnaire and submit it in Google Forms; e-Prefectures of Greece are covered.

At the beginning of each questionnaire, the researcher informs the respondent about the purpose of the research, about the future use of personal data that will emerge by clarifying the protection of them (Cohen et al., 2007). Research participants need to know that their views will scientifically investigated and that they have the right to consent to participate in the research process or to refuse to participate or even resign at any time they wish (Creswell, 2016).

The processing and presentation of the results have done through descriptive and inductive statistics. In descriptive statistics, results have presented through graphs, frequency tables, and indicators, such as mean and standard deviation, while in inductive statistics, possible correlations between variables have explored. All descriptive measures and inductive statistical controls reported below have derived using the SPSS 23 statistical package for use in the social sciences.

The procedure of processing the primary data from 3-point ratings on each of the six emotional-behavioral status scales also yields so-called "T - values" for normative, borderline, and clinical status (Achenbach, 2013). The quantitative criteria are as follows:

- ✓ T-values less than 65 are an indicator of typical/normative behavior,
- ✓ T-values of 65 to 69 outline borderline behavior,
- ✓ T-values greater than or equal to 70 define behavior in the clinical spectrum.

Efforts have been made in the present study to ensure reliability of the results, I e. determining the extent to which a repeat study would show identical or similar results. Bell (2005) emphasized that reliability is the extent to which a test produces the same or similar

results on all occasions. According to Arksey & Knight (1999), to ensure trustworthiness, specific research questions are clear, precise, and unambiguous and avoid overgeneralization. To ensure reliability, the research questions have checked by a third party (my supervisor for clarity and ambiguity).

In order to establish the reliability of the constructed "Questionnaire for Inclusion of Students with SEN in Secondary Mass Schools", the statements in it have divided into subgroups based on common content. For each subgroup, a Cronbach's Alpha reliability index was calculated, which as a statistical indicator can vary in values from 0 to 1. High reliability is awarded when the indicator receives values greater than 0.7, although some stricter authors accept value of 0.8 for lower confidence limit. Our coefficient results are in the high reliability parameters (0.7 - 0.8).

CHAPTER 3

ANALYSIS OF EMPIRICAL DATA

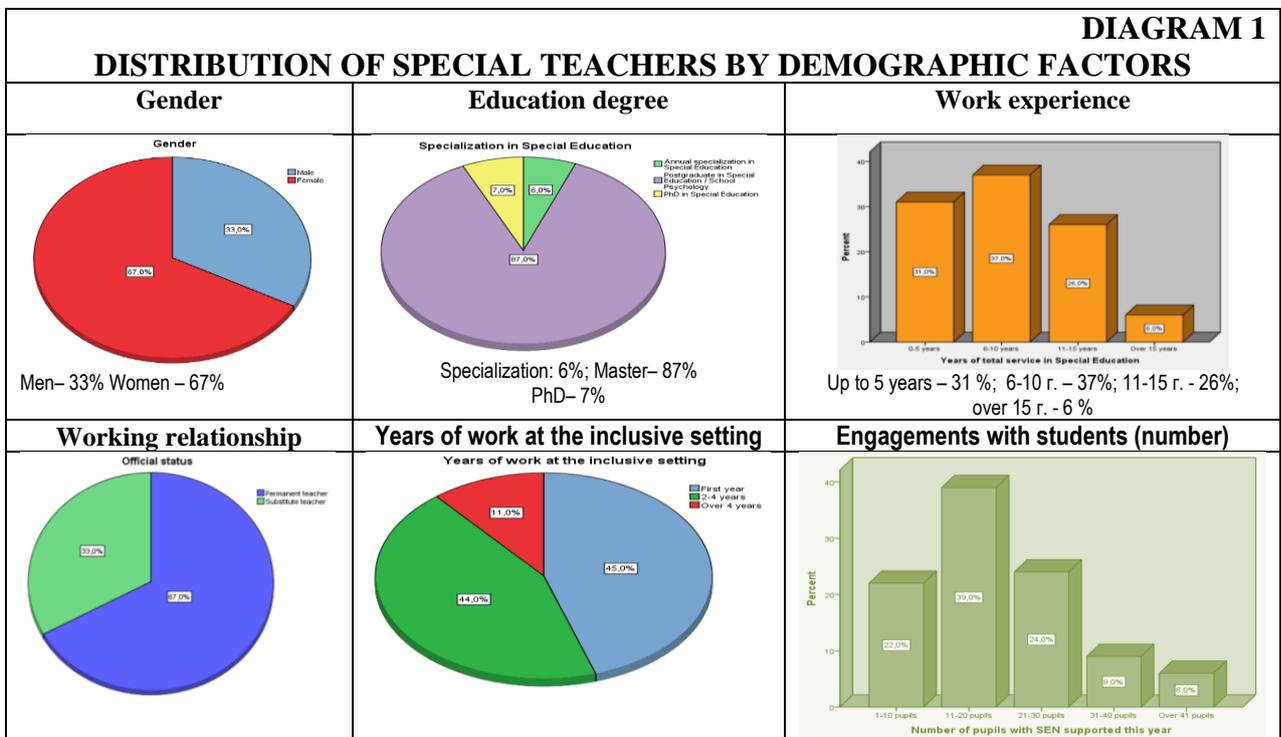
This chapter presents analyzes and discussion of empirical information on the complex determinants of learning in middle school students with SEN provided through expert evaluations of a representative sample of special educators.

3.1 Demographic characteristics of special educators and adolescent students with SEN in sample

Demographic characteristics of special educators

The study population is of special education teachers who work in inclusive environments of basic secondary education in high schools and lyceums in the Greek territory.

The sample has collected from 100 teachers who were willing to provide information about their work and information about the students they teach in an inclusive environment. Each teacher agrees to answer questions about behavioral, emotional, and cognitive characteristics of two of their students, their school environment, social environment, and family. Teacher characteristics have collected to examine the sampling distribution based on them and the impact of each on the learning of students with SEN. The results have summarized in diagram 1.



Demographic characteristics of students with SEN

The studied distribution of 200 students with SEN in the sample by gender, school level, age and diagnosis has presented in table 1 and diagram 2.

TABLE 1			
DEMOGRAPHIC CHARACTERISTICS OF STUDENTS WITH SEN			
Demographic characteristics	Categories	N	%
Gender	Boy	142	71%
	Girl	58	29%
Grade	1st grade of Gymnasium	61	30,5%
	2 nd grade of Gymnasium	67	33,5%
	3 rd grade of Gymnasium	43	21,5%
	1 st grade of Lyceum School	21	10,5%
	2 nd grade of Lyceum School	6	3%
	3 rd grade of Lyceum School	2	1%
Age	12	5	2,5%
	13	61	30,5%
	14	64	32%
	15	42	21%
	16	18	9%
	17	10	5%
Diagnosis	Dyslexia (Special learning difficulties)	55	27,5%
	Dyslexia with emotional difficulties	2	1%
	Dysgraphia (Special learning difficulties)	5	2,5%
	Dysnumeracy (Special learning difficulties)	2	1%
	Dysnumeracy with emotional difficulties	1	0,5%
	Illiteracy (Special learning difficulties)	1	0,5%
	Generalized learning difficulties	47	23,5%
	Attention Deficit hyperactivity Disorder	26	13%
	Attention Deficit hyperactivity Disorder with emotional difficulties	2	1%
	Attention Deficit hyperactivity Disorder with General learning difficulties and emotional difficulties	2	1%
	Attention Deficit hyperactivity Disorder with dyslexia	5	2,5%
	Autism spectrum	3	1,5%
	Asperger syndrome	2	1%
	Complex cognitive and emotional difficulties	6	3%
	Mild mental retardation	2	1%
	Enmity with reduced learning motivation	7	3,5%
	Poor memory	1	0,5%
	Blindness and vision impairment	4	2%
There is no official assessment	1	0,5%	

The results show that almost $\frac{3}{4}$ of the students are boys (71%), while the remaining 29% are girls. The overwhelming majority of assessed students were high school students (85.5%): 30.5% 1st grade high school students, 33.5% 2nd grade students, and 21.5% 3rd grade students. Of all students with SEN, 10.5% are from the first year of a lyceum, 3% from the second year of a lyceum and 1% from the 3rd year. In terms of age, 86% of students with SEN are between 12-15 years old and the rest are 16-17 years old (diagram 2).

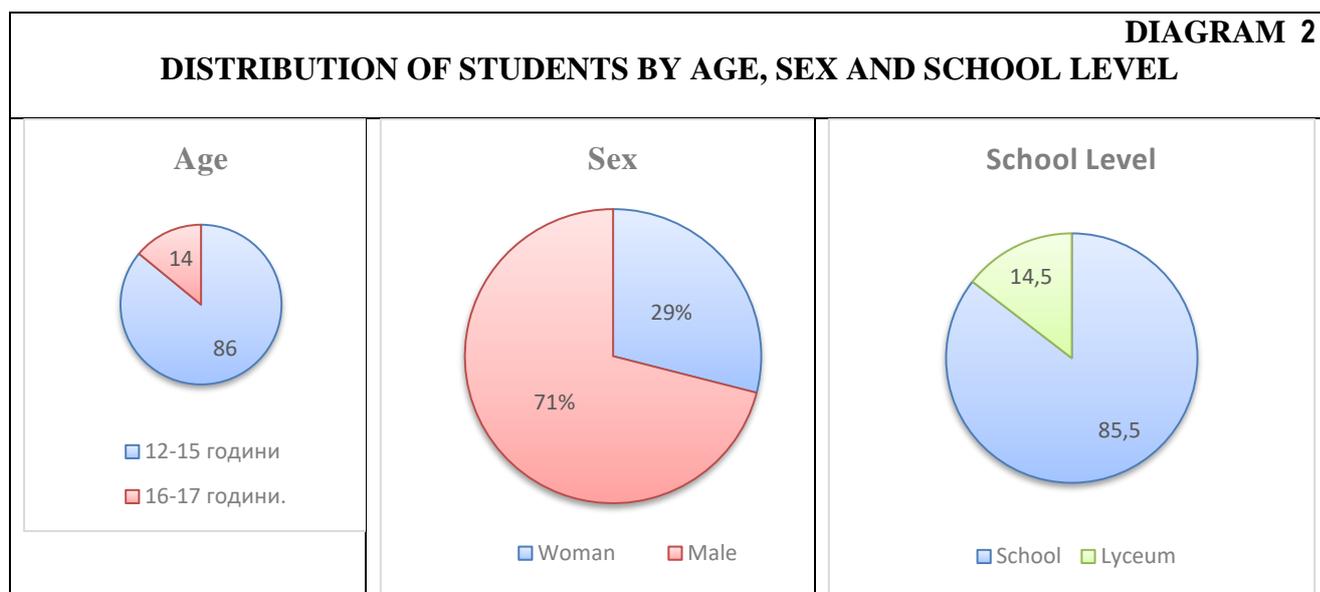
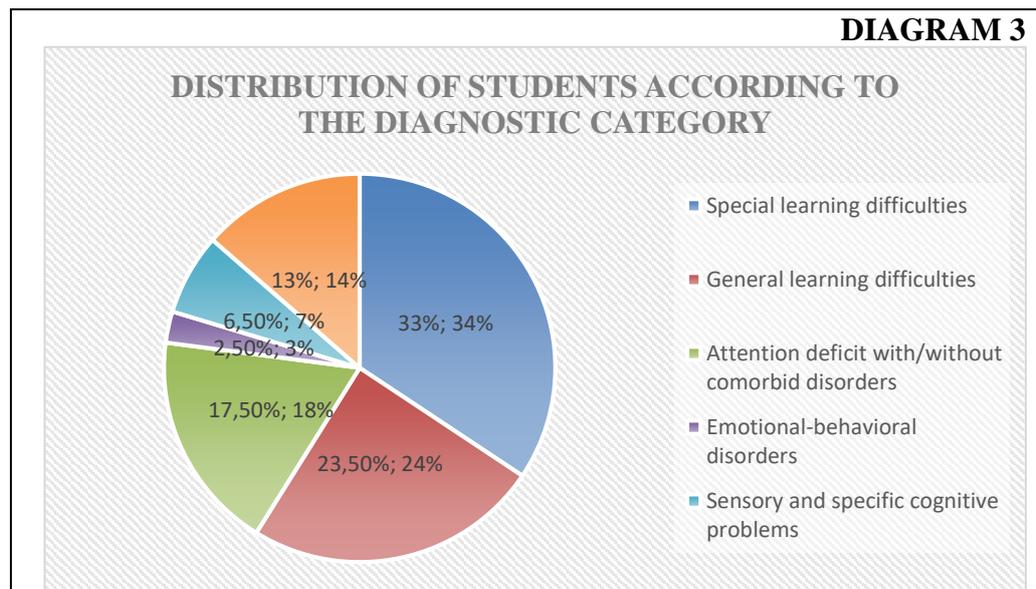


Table 1 shows that the sample has dominated by multiple or co-occurring disorders: special learning difficulties (dyslexia, dysgraphia, dyscalculia, illiteracy), general learning difficulties, attention deficit hyperactivity disorder (ADHD), attention deficit hyperactivity disorder and emotional difficulties, hyperactive attention deficit disorder and general learning difficulties, emotional difficulties, attention deficit hyperactivity disorder with dyslexia, autistic spectrum, autistic spectrum with emotional difficulties, complex cognitive and emotional difficulties, mild mental retardation, hostility with reduced motivation to learn, poor memory, poor reading, blindness and visual impairment, Asperger's syndrome, hostility and impaired vision, and a student without a specific diagnosis. Diagram 3 shows an attempt to aggregate individual diagnoses.

DIAGRAM 3

The results show that students with Specific Learning Disabilities (33%), followed by students with Generalized Learning Disabilities (24%), and Attention Deficit Disorder (18%) dominate among those studying in mainstream schools. The representation of students with sensory problems has limited, with visual impairments being 2%, and auditory impairments not included in the sample.

3.2 Emotional-behavioral profile of adolescent students with SEN

In this section, the emotional-behavioral profile of students with SEN as a part of the inner factors influences on their learning competence has presented. We study distribution of teacher Assessment on 3-point scale in behavioral parameters, organized in six domains according TRF of Achenbach (Achenbach, 2013). The frequencies and percentages of the responses have calculated for each proposition concerning student behavior problems. Initially, emotional performance of the students has studied (Table 2). The most frequent phenomena have the little pleasure that students with SEN receive from things they do (30.5%) and the apathy that characterizes them (38%). Almost $\frac{1}{4}$ of students with SEN feels unworthy (24.5%) and lacks energy (22%). Almost no one have been thinking about suicide (94.5%) or deliberately harming themselves (93.5%). Constant crying has a condition that characterizes a small number of students (19%).

EMOTIONAL PROBLEMS OF STUDENTS WITH SEN			
Emotional Problems	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
There is very little he/she enjoys.	78 (39%)	61 (30,5%)	61 (30,5%)
He / She cries a lot.	162 (81%)	30 (15%)	8 (4%)
He / She deliberately harms self or attempts suicide.	187 (93,5%)	10 (5%)	3 (1,5%)
He / She feels worthless or inferior.	79 (39,5%)	72 (36%)	49 (24,5%)
He / She feels too guilty.	140 (70%)	38 (19%)	22 (11%)
He / She is overtired without good reason.	108 (54%)	63 (31,5%)	29 (14,5%)
He / She is apathetic or unmotivated.	71 (35,5%)	53 (26,5%)	76 (38%)
He / She talks about killing self.	189 (94,5%)	10 (5%)	1 (0,5%)
He / She is underactive, slow moving, or lacks energy.	116 (58%)	40 (20%)	44 (22%)
He / She is unhappy, sad, or depressed.	115 (57,5%)	52 (26%)	33 (16,5%)

The results of answers about stress problems faced by students with SEN have listed in Table 3.

ANXIETY PROBLEMS OF STUDENTS WITH SEN			
Anxiety problems	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
Clings to adults or too dependent	120 (60%)	49 (24,5%)	31 (15,5%)
Fears certain animals, situations, or places other than school	163 (81,5%)	31 (15,5%)	6 (3%)
Fears going to school	171 (85,5%)	21 (10,5%)	8 (4%)
Nervous, high-strung, or tense	113 (56,5%)	38 (19%)	49 (24,5%)
Too fearful or anxious	103 (51,5%)	56 (28%)	41 (20,5%)
Worries	75 (37,5%)	71 (35,5%)	54 (27%)

The fear of specific animals, situations and places outside of school as well as the fear of school are a frequent situation for a very small number of students (3% and 4% respectively). Almost ¼ of students with SEN has nervous and a lot of tension (24.5%). The existence of concerns has very often found in an even larger percentage of students (27%). Only 20.5% of the students described have characterized by a great deal of fear or anxiety, while even fewer are those who are completely dependent on an adult (15.5%).

The physical problems of students with SEN have studied. As shown in Table 4, the percentage of students who very often show at least one of these problems ranges from 1% to

5.5%. A double-digit percentage of students experience several times headaches (17%), pains (14%) and stomach problems (12.5%). In any case, the vast majority of students (77.5% - 95%) never show the above symptoms and in addition vomiting, nausea, skin problems or vision problems.

PHYSICAL PROBLEMS OF STUDENTS WITH SEN			
Physical problems without known medical cause	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
Aches or pains	162 (81%)	28 (14%)	10 (5%)
Headaches	155 (77,5%)	34 (17%)	11 (5,5%)
Nausea, feels sick	181 (90,5%)	14 (7%)	5 (2,5%)
Has eye problems	185 (92,5%)	10 (5%)	5 (2,5%)
Rashes or other skin problems	189 (94,5%)	9 (4,5%)	2 (1%)
Has stomach problems	169 (84,5%)	25 (12,5%)	6 (3%)
Vomiting, throwing up	190 (95%)	8 (4%)	2 (1%)

Attention-deficit and hyperactivity problems form the next branch of problems (Table 5). In this case, more than half of the students cannot, very often, concentrate and focus their attention for a long time (56.5%). Most half of the students have very often characterized by an inability to finish things they start (46%). They have easily distracted (48.5%) and do not complete their tasks (46%). On the other hand, more than half never disturb other people (50.5%), do not argue (52%), disrupt class discipline (54%) or make a fuss (59%). Almost half of the students, the teachers have answered negatively that they talk too much (47.5%) and get angry (48%).

ATTENTION DEFICIT AND HYPERACTIVITY PROBLEMS OF STUDENTS WITH SEN			
Attention problems (Inattention Hyperactivity-Impulsivity)	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
Fails to finish things he/she starts	49 (24,5%)	59 (29,5%)	92 (46%)
Can't concentrate, can't pay attention for long	29 (14,5%)	58 (29%)	113 (56,5%)
Can't sit still, restless, or hyperactive	78 (39%)	59 (29,5%)	63 (31,5%)
Fidgets	96 (48%)	55 (27,5%)	49 (24,5%)
Difficulty following directions	54 (27%)	67 (33,5%)	79 (39,5%)
Disturbs other people	101 (50,5%)	45 (22,5%)	54 (27%)
Impulsive or acts without thinking	71 (35,5%)	60 (30%)	69 (34,5%)
Talks of turn	104 (52%)	44 (22%)	52 (26%)
Disturbs class discipline	108 (54%)	42 (21%)	50 (25%)
Is inattentive or easily distracted	49 (24,5%)	54 (27%)	97 (48,5%)
Doesn't finish tasks	49 (24,5%)	59 (29,5%)	92 (46%)
Talks too much	95 (47,5%)	59 (29,5%)	46 (23%)
Unusually loud	118 (59%)	41 (20,5%)	41 (20,5%)

The questions concerning opposition problems have studied (Table 6). Most students show none of these problems (62.5% to 65%). Argumentativeness, reactivity towards teachers, disobedience at school, stubbornness and outbursts of anger are symptoms that have observed very often in at most 20.5% of students.

ADVERSARIAL/CHALLENGING PROBLEMS OF STUDENTS WITH SEN			
Adversarial/challenging problems	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
Argues a lot	126 (63%)	36 (18%)	38 (19%)
Defiant, talks back to staff	130 (65%)	29 (14,5%)	41 (20,5%)
Disobedient at school	126 (63%)	33 (16,5%)	41 (20,5%)
Stubborn, sullen, or irritable	125 (62,5%)	40 (20%)	35 (17,5%)
Temper tantrums or hot temper	126 (63%)	33 (16,5%)	41 (20,5%)

The studied teachers' ratings of the more severe conductive type of behavior problems of students with SEN have systematized in Table 7.

BEHAVIORAL PROBLEMS OF STUDENTS WITH SEN			
Behavioral problems	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
Cruelty, bullying, or meanness to others	161 (80,5%)	20 (10%)	19 (9,5%)
Destroys property belonging to others	161 (80,5%)	22 (11%)	17 (8,5%)
Doesn't seem to feel guilty after misbehaving	135 (67,5%)	35 (17,5%)	30 (15%)
Breaks school rules	124 (62%)	38 (19%)	38 (19%)
Gets in many fights	145 (72,5%)	31 (15,5%)	24 (12%)
Hangs around with others who get in trouble	139 (69,5%)	30 (15%)	31 (15,5%)
Lying or cheating	155 (77,5%)	28 (14%)	17 (8,5%)
Physically attacks people	168 (84%)	16 (8%)	16 (8%)
Behaves irresponsibly	89 (44,5%)	48 (24%)	63 (31,5%)
Steals	185 (92,5%)	12 (6%)	3 (1,5%)
Swearing or obscene language	149 (74,5%)	26 (13%)	25 (12,5%)
Threatens people	166 (83%)	19 (9,5%)	15 (7,5%)
Truancy or unexplained absence	136 (68%)	28 (14%)	36 (18%)

As can be seen at Table 7, irresponsible behavior has the problem that occurs very often in a larger percentage of students with SEN (31.5%) compared to the rest of the behavior problems. A double-digit percentage shows the violation of school rules (19%), getting involved in fights (12%), and hanging out with children who make noise (15.5%), swearing (12.5%) and unexcused absence from school. In contrast, theft has a problem that never occurs to 92.5% of students with SEN.

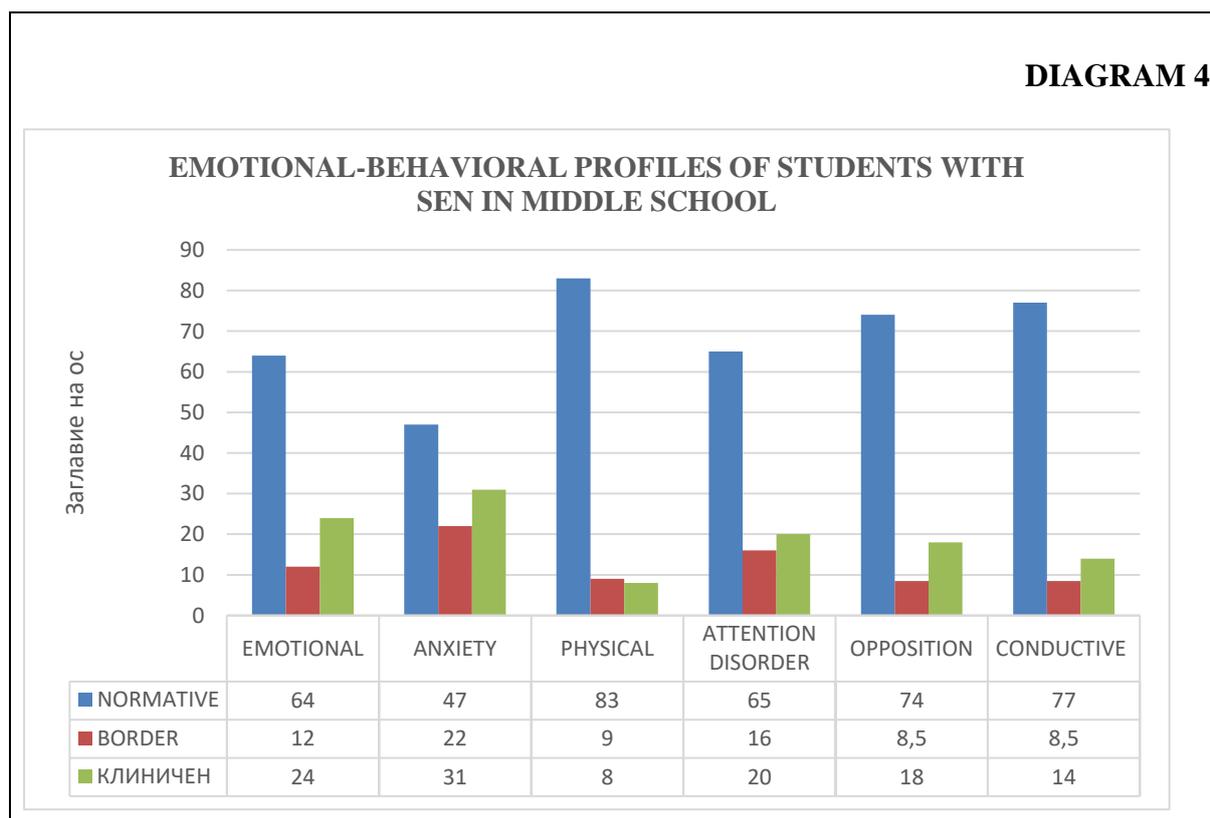
TABLE 8

DISTRIBUTION OF EMOTIONAL-BEHAVIORAL PROBLEMS OF STUDENTS WITH SEN

Behavioral problems	Behavioral groups		
	Typical behavior N (%)	Borderline clinical behavior N (%)	Clinical behavior N (%)
Emotional problems	128 (64%)	24 (12%)	48 (24%)
Anxiety problems	94 (47%)	44 (22%)	62 (31%)
Physical problems	166 (83%)	18 (9%)	16 (8%)
Attention Deficit / Hyperactivity problems	129 (64,5%)	32 (16%)	39 (19,5%)
Adversarial/challenging problems	147 (73,5%)	17 (8,5%)	36 (18%)
Behavioral problems	154 (77%)	17 (8,5%)	29 14,5%)

The distribution of the students in the 3 behavior groups (typical, borderline, clinical) taking into account the T values in each of the behavior factors has shown in Table 8 and Diagram 4.

DIAGRAM 4



The largest percentage of typical behavior has observed in the case of physical problems (83%), behavioral problems (77%) and oppositional problems (73.5%). Anxiety problems have led to clinical behavior in almost 1/3 in sample of 200 students described by 100 Special Education teachers (31% and 24% show clinical behavior in terms of emotional problems).

To recapitulate, the percentage of students who have extreme emotional and stress problems has very small. In fact, more than 1/3 students described by their teachers do not have such problems. Physical problems consist another factor in which students have a very low percentage of clinical behavior while the vast majority shows a typical picture. On the other hand, some of the attention deficit and hyperactivity problems occur very seriously in more than half of the students that attend an inclusive setting.

In addition to problems with anxiety, depressive symptoms and attention are the data on increased cases of borderline, resp. 22%, 12% and 16%, which places them as dominant characteristics of students with SEN in mainstream educational structures. Overall, on the Physical, Oppositional, and Conductive Behavior Problem scales, students fall within normative limits.

The examination of gender differences in the occurrence of emotional-behavioral problems found statistically significant values for physical (somatic) disorders ($X^2 = 6.791$, $p=0.034$), problems with attention deficit and hyperactivity ($X^2=10.949$, $p=0.004$), oppositional problems ($X^2=10.949$, $p=0.004$) and conductive behavioral problems ($X^2 = 9.548$, $p=0.008$). Physical problems have significantly more pronounced in girls, but mainly as borderline clinical behavior. On the other three scales, boys significantly exceeded girls' performances in both borderline and clinical parameters.

3.3 Learning performance of students with SEN

Here we present results for learning and school performance of students with SEN, receiving from assessment of teachers using 3-point range scale for questions from N 54 to N 74 in following domains: Basic skills; Performance in cognitive tests and exercises; Performance in school subjects; Influence of biological, cognitive and behavioral characteristics of students on school performance.

Distribution of the teacher Assessments on 3-point range scale for Basic skills has shown in Table 9. In terms of reading a text easily, the picture point that 39% from students have no problems and 34 % sometimes. According written skills there are more difficulties, only 19% of the students have produced satisfactory written language, and 35.5% never have been able to take such an action. The results indicate that almost half of the students with SEN characterize several times by a distinct handwriting (44.5%) while 30% never display this skill.

TABLE 9			
BASIC SKILLS OF STUDENTS WITH SEN			
Basic skills	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
Can read a passage easily for his/her difficulties	54 (27%)	68 (34%)	78 (39%)
Products satisfactory written speech for his/her difficulties	71 (35,5%)	91 (45,5%)	38 (19%)
His/her graphic character is distinguishable	60 (30%)	89 (44,5%)	51 (25,5%)

The performance of students with SEN **in exercises and written tests** has listed in Table 10.

TABLE 10			
STUDENT PERFORMANCE IN COGNITIVE TESTS AND EXERCISES			
Participation in exercise and test solving	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
Participates in the class by solving exercises and activities assigned to him/her	47 (23,5%)	101 (50,5%)	52 (26%)
Has the ability to solve exercises / make homework alone	63 (31,5%)	91 (45,5%)	46 (23%)
Has the ability to solve exercises / tasks in groups of 2 or more people	54 (27%)	102 (51%)	44 (22%)
Has time to complete his/her work	83 (41,5%)	87 (43,5%)	30 (15%)
Has satisfactory performance in quizzes/tests/final exams and may be promoted to the next grade	65 (32,5%)	93 (46,5%)	42 (21%)
Poor school work, underachieving, not working up to potential	66 (33%)	79 (39,5%)	55 (27,5%)
Has progress in cognitive skills and "learning to learn"	46 (23%)	103 (51,5%)	51 (25,5%)
Has progress in "learning to do"	36 (18%)	93 (46,5%)	71 (35,5%)

It is worth noting that 1/3 of student sample many times seem be good at "learning to do" things in 35.5%, and ¼ has very often characterized by participation in solving exercises and activities within the classroom (26%), and progress in cognitive skills (25.5%). On the other hand, the percentage of students with SEN has approximately the same who very often have low performance and do not develop their full potential, while 33% of students never show this particular problem. The largest percentage of negative responses has presented in the proposal regarding the sufficiency of time for students with SEN to complete their homework (41.5%).

About the coexistence with others and the management of emotional problems it turned out that only 19.5% from students with SEN have unable to manage these problems and adapt

to the school environment and 34% usually has improved emotionally and in their contacts with other people. The teacher reports for student performance in **school subjects** have assumed in Table 11.

More than $\frac{1}{4}$ of students with SEN have very often a good performance in Arts and Music (26.5%), Gymnastics (32%), but more than half of them do not show progress in learning Foreign Languages (52.5%), 33% in the courses of Positive Sciences as Mathematics, Chemistry, Physics and Biology). Impressive fact is that 65.5% of students with SEN sometimes show good performance in theoretical courses (Ancient Greek Language, Modern Greek Language and History).

PERFORMANCE IN SCHOOL SUBJECTS			
Lessons performance	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
Has progress in the subject area of Modern Greek Language, Ancient Greek Language, History (humanities)	29 (14,5%)	131 (65,5%)	40 (20%)
Has progress in the subject area of Mathematics Chemistry Physics Biology	66 (33%)	103 (51,5%)	31 (15,5%)
Has progress in the subject area of Art, Music	28 (14%)	119 (59,5%)	53 (26,5%)
Has progress in the subject area of Physical Education	28 (14%)	108 (54%)	64 (32%)
Has progress in the subject area of Foreign Languages	105 (52,5%)	82 (41%)	13 (6,5%)

About the effect of various student characteristics on their school performance teacher position has presented in Table 12.

INFLUENCE OF BIOLOGICAL, COGNITIVE AND BEHAVIORAL CHARACTERISTICS OF STUDENTS ON SCHOOL PERFORMANCE			
Factors that affect school performance	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
To what degree do you think that biological characteristics of the student with SEN affect his/her school achievement?	23 (11,5%)	54 (27%)	123 (61,5%)
To what degree do you think that cognitive characteristics of the student with SEN affect his/her school achievement?	3 (1,5%)	34 (17%)	163 (81,5%)
To what degree do you think that behavioral characteristics of the student with SEN affect his/her school achievement?	12 (6%)	47 (23,5%)	141 (70,5%)

The expert evaluations of the teachers argue for the strong influence of internal factors on the school achievements of students with SEN, placing the student's cognitive potential in the first place of importance, followed by the emotional-behavioral.

3.4 The family, school and social environment of students with SEN

In this section, we present and analyze the observable and the relative frequencies of the answers for the questions concerning the role of family, school and the society the students with SEN live.

The family factors

Table 13 summarizes information about the family environment. It is indicative of the family's attitude to the student's needs that 44.5% of the teachers reported a very high level of supportive environment and 40.5% stated that the student's parents are in contact with them and the school community very often.

CHARACTERISTICS OF THEIR FAMILY ENVIRONMENT			
Family support	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
The student with SEN lives in a supportive family environment.	53 (26,5%)	58 (29%)	89 (44,5%)
Educational level of parents is helpful for academic effort of the student with SEN.	87 (43,5%)	61 (30,5%)	52 (26%)
The psychological climate in the family is helpful for personal growth of the student with SEN.	55 (27,5%)	77 (38,5%)	68 (34%)
Parents of the student with SEN have frequent communication (telephone / direct / scheduled appointments) with the special education teacher and the school community.	55 (27,5%)	64 (32%)	81 (40,5%)
Parents of the student with SEN participate in school activities and the school administration.	95 (47,5%)	53 (26,5%)	52 (26%)
School psychological service support parents of the student with SEN	99 (49,5%)	57 (28,5%)	44 (22%)
Cooperation among the special education teacher and the parents improve social adaptation and school performance of the student with SEN	36 (18%)	89 (44,5%)	75 (37,5%)
Parents of the student with SEN are properly educated to support "learning to learn" and "learning to do" of their child	95 (47,5%)	70 (35%)	35 (17,5%)
Parents have knowledge of the individual characteristics of their child and are educated to support his/her "learning to live" independent.	54 (27%)	93 (46,5%)	53 (26,5%)

More than 1/3 of teachers think that the family climate has very favorable for the smooth psychological development of their student (34%) and that the cooperation of the parents with the Special Education teacher very often leads to the high social adaptation and school performance (37.5%). Almost half of the teachers' state that the educational background of the parents has not helpful in improving the learning performance of the student with SEN (43.5%). Similar percentages of negative responses have noted in the proposals concerning the

participation of the parents in school management and school activities (47.5%). The same has been observed regarding the school's provision of psychological support to the parents (49.5%) and **the proposal regarding the existence of appropriate training** on the part of the parents in order to support the student with SEN in the learning process (47.5%). There are and some cases with the lowest percentage of positive responses (“It fits to the student very often”).

There have individual results at this research of particular interest that need further study: 23% have given negative answer for progress in cognitive skills and “learning to learn” of their students. 18% have given negative answer for progress in “learning to do” of their students. 47,5% have given negative answer for the statement that parents of the student with SEN are properly educated to support “learning to learn” and “learning to do” of their child. 27% have given negative answer for the statement that parents have knowledge of the individual characteristics of their child and are educated to support their “learning to live” independent. It is obvious at this research of paramount importance the necessity of early intervention that includes the aim at above mentioned abilities.

School environment

The information concern both the human resources with which the education has staffed and the tools used for the educational process. The results of the statistical analysis of the responses regarding the school environment have shown in Table 14. In 52% of cases the teachers sometimes have found the KEDASY instructions and Medical Education assessments for the teachers of students with SEN useful. Almost half of the answers have negative regarding the professionalism of school psychologists in their efforts for school integration of the student with SEN (48.5%). The percentage of negative responses regarding the help that Special Education teachers receive in their educational work from receiving information provided by school psychologists about the special characteristics of students with SEN is approximately the same (49%). In more than half of the cases of students with SEN the teachers have answered that they cooperate very effectively with the General Education teachers in order to improve learning performance of the student with SEN (53.5%). It is interesting that very often the school community has distinguished by a spirit of cooperation and respect towards the diversity of the student with SEN (44%).

TABLE 14

CHARACTERISTICS OF THE SCHOOL ENVIRONMENT OF STUDENTS WITH SEN

School support	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
I find early special interventions in preschool and primary schools are satisfactory for personality and school achievement of student.	67 (33,5%)	69 (34,5%)	64 (32%)
I find scientific instructions of KEDASY (Centers for Interdisciplinary Assessment, Counseling & Support) and Medical Education assessments are helpful for all educators of the student with SEN.	19 (9,5%)	104 (52%)	77 (38,5%)
School psychologists have important professional function in educational inclusion of SEN student.	97 (48,5%)	69 (34,5%)	34 (17%)
The transfer of knowledge for individual characteristics of students by school psychologist supports my educational work with them.	98 (49%)	67 (33,5%)	35 (17,5%)
I effectively co-decide with mainstream teachers about the student's educational goals/grades/exams/ evaluation/ promotion to the next class.	27 (13,5%)	66 (33%)	107 (53,5%)
The classrooms are appropriate to meet special educational needs (spacious/ airy/ quiet /have the necessary educational material/updated technological support)	96 (48%)	84 (42%)	20 (10%)
General and special educational needs are adequately reflected through synchronization between the national curriculum and the student's personalized educational program	73 (36,5%)	107 (53,5%)	20 (10%)
Classmates accept personal characteristics of the student with SEN and freely communicate with him/her	38 (19%)	67 (33,5%)	95 (47,5%)
Classmates have a strong impact on the acquisition of new learning skills and knowledge by student with SEN	45 (22,5%)	92 (46%)	63 (31,5%)
There are reliable tools and standards for assessments of the progress in learning skills and knowledge of the student with SEN	48 (24%)	121 (60,5%)	31 (15,5%)
I have sufficient knowledge of the special educational needs of students and the assessment of their changes	6 (3%)	90 (45%)	104 (52%)
I have enough time to address the student's behavioral, emotional, cognitive and academic needs through an appropriately designed intervention program	94 (47%)	76 (38%)	30 (15%)
The Special Education Consultant supports my educational work with students in the inclusive setting effectively	115 (57,5%)	64 (32%)	21 (10,5%)
There are well-trained teaching assistants that provide good quality help to the special education teacher	142 (71%)	34 (17%)	24 (12%)
The school community has a team spirit, an atmosphere of cooperation and respect for the diversity of the student with SEN	23 (11,5%)	89 (44,5%)	88 (44%)
There are a good cooperation and partnership among all senior teachers, school specialists in inclusive education, Special Education counselors, and K.E.D.A.S.Y. in work with SEN students	34 (17%)	116 (58%)	50 (25%)
I am satisfied with the national curriculum for inclusion, legislative measures and official educational guidelines for the student with SEN	94 (47%)	94 (47%)	12 (6%)
I am satisfied from my educational work with students in the inclusive setting	14 (7%)	114 (57%)	72 (36%)
I would like to work at the same inclusive setting with students during next academic year.	20 (10%)	52 (26%)	128 (64%)

The vast majority of students with SEN has described by the teachers in the sample, there has no properly trained teaching assistant to provide adequate support to the Special Education teacher (71%). The support of the teacher by the corresponding counselor is the proposal with the next highest frequents of negative responses (57.5%). Data shows that the teachers do not have the appropriate time to recognize the emotional, behavioral and cognitive needs of their students through intervention. Besides, in 47% of cases, Special Education teachers have stated that they are dissatisfied with the national planning and the official instructions of the State for the management of students with SEN. In 58% of cases sometimes

the overall cooperation between KEDASY, the Special Education teacher, the General Education teachers and the school counselors manages to be successful. The percentage of negative responses regarding the help that Special Education teachers receive in their educational work from receiving information provided by school psychologists about the special characteristics of students with SEN has approximately the same (49%).

The suitability of the classrooms has another proposition where there were a very large percentage of negative responses (48%). As far as it concerns management of classrooms and their self-efficacy, Hopman et al. (2018) in their research mention that special education teachers with high levels of closeness and self-efficacy have reported increases in emotional exhaustion as a function of classroom-level disruptive behaviors. 53.5% of the teachers of the sample stated that sometimes the national planning and the individualized teaching program of the student with SEN have synchronized in order to lead to a high learning outcome. 47.5% stated that the classmates of the student with SEN accept his/her personal characteristics and talk freely with him/her. Teachers feel largely happy with the school's climate towards students with SEN and the treatment those students receive from their classmates. The teaching program does not help special education teachers as far as it concerns inclusion procedure of students with SEN during the educational process. A (52%) percentage has noted in the statement of the teachers that they are sufficiently aware of the special needs of their students and are able to recognize their changes. Teachers judge themselves to the same degree capable of the profession they have called upon to perform regardless their specialization in the field of Special Education. The vast majority of teachers who have participated in the research have a master's degree in Special Education (87%) and 7% have a doctoral degree.

The teachers have limited time to recognize the emotional, behavioral and cognitive needs of their students through intervention. This demands trained teaching assistant, personalized curriculum, professionalism of school psychologists and the results of this research are not so encouraging. In this context Nusser & Gehrler (2020) deal in their research with heterogeneity in school classes that implements differentiated instruction practices by taking students' learning profiles and conditions into account and stress that this can lead to a positive competence development of students with low achievement levels and SEN compared to students with average or high achievement levels. The support of the teacher by the corresponding counselor has the proposal with the next highest percentage of negative responses (57.5%). The vast majority of students with SEN have no properly trained teaching assistant to provide adequate support to the Special Education teacher and need of a support has clearly aware. A very large percentage (44%) has answered that very often the school

community has distinguished by a spirit of cooperation and respect towards the diversity of the student with SEN. In 58% of cases sometimes the overall cooperation between KEDASY, the Special Education teacher, the General Education teachers and the school counselors manages to be successful;

In 47% of cases, Special Education teachers have stated that they have dissatisfied with the national curriculum for inclusion legislative measures and official educational guidelines for the student with SEN. Those have relative with all mentioned at the theoretical framework, that teachers need motivation to modify their teaching and learning in the light of new ideas about theory and practice through continuing professional development (Mavropoulou, Pandeliadu, 2000; Eldar et al., 2010; Koutrouba, Vamvakari & Theodoropoulos, 2008). The overall image that Special Education teachers have of their work has sometimes positive in 57% of cases. The largest part of positive responses has appeared in the teachers' intention to work in the same school in the next school year (64). This shows that they want to build steady educational relationships with their students.

Society

The results regarding the role of society in the life of the student with SEN have listed in Table 15.

It is worth noting that there has no sentence with a rate of a positive response ("It fits to the student very often") greater than 50%. In almost half of the cases there has agreement regarding the effect of geographical elements on the academic performance of the student with SEN (47%). There have a high frequent of negative responses about the existence of sufficient financial funding to achieve the social inclusion of the student with SEN (69%). In more than half of students with SEN the teachers answer that there have no sufficiently organized social and public health services during the afternoon hours (56.5%). The same applies to the existence of organization and appropriate structures from the local community in order for the student with SEN to be professional rehabilitation after finishing school (53.5%). It is important that the percentage of negative responses in the case of social isolation or rejection of the student with SEN is equally high (53%). In the remaining cases, the teachers' answers have almost divided between the 3 proposed options. This image has noted in the proposal regarding the existence of serious prejudices and stereotypes in the social environment to the abilities of the students with SEN and regarding the responsibility of the social environment, as far as it concerns the behavioral and emotional problems that the student with SEN student faces. A similar picture appears in the case the close social environment is informed, sensitive and

supportive to the SEN student uniqueness and the willingness of social environment for communication and joint activities with him/her.

Social support	Answers		
	It doesn't fit to the student N (%)	Sometimes, it fits to the student N (%)	It fits to the student very often N (%)
Geographical position and climate conditions of social environment the student with SEN lives (e.g. city, village, mountains, heat, snow) affect his/her academic progress	60 (30%)	45 (22,5%)	95 (47,5%)
The social environment has serious prejudices/stereotypes related to the abilities of the student with SEN	63 (31,5%)	72 (36%)	65 (32,5%)
The student with SEN faces social isolation/rejection (bullying) because of his/her uniqueness	106 (53%)	50 (25%)	44 (22%)
The emotional and behavioral problems of the student with SEN mainly arise from the social environment in which he lives and develops	73 (36,5%)	61 (30,5%)	66 (33%)
The close social environment is informed/sensitive/supportive to the SEN student uniqueness	51 (25,5%)	82 (41%)	67 (33,5%)
The student with SEN lives in a social environment that has interest and motivation for communication and joint activities with him/her	76 (38%)	74 (37%)	50 (25%)
Modern society offers conditions and real prospects for an independent life of the student in adulthood	88 (44%)	97 (48,5%)	15 (7,5%)
Social services and public mental health services are organized to support biological, cognitive, emotional, behavioral needs of the student with SEN during the afternoon	113 (56,5%)	70 (35%)	17 (8,5%)
The local social community has organization and structures that offer employment opportunities adapted to the student's qualifications after leaving school	107 (53,5%)	84 (42%)	9 (4,5%)
There are efficient financial resources and funding for achievement of social inclusion of the student with SEN	138 (69%)	56 (28%)	4 (3%)

The answers of the teachers regarding the role of society in the life of the student with SEN have given bellow:

- 1) In terms of society, teachers converge on the fact that students with SEN do not have the proper treatment. The prejudices of society and geographical and climate characteristics of the place in which they live negatively affect students.
- 2) The geographical and climatic characteristics of the place of residence appear to be a significant factor, as about half of the expert evaluations indicate their effect on their academic achievements (47%).

For more than half of students with SEN, teachers indicate a lack of sufficiently

organized social and health services in the afternoon hours (56.5%) for these students. The same applies to the presence of an organization and appropriate structures from the local community for professional rehabilitation of the student with SEN after finishing school (53.5%). Society is not sufficiently prepared for the seamless inclusion of people with SEN because there are no appropriate structures and resources to meet the needs of students with SEN after school life as adults. There is a large percentage of negative answers regarding the availability of sufficient financial funding to achieve social inclusion of the student with SEN (69%). In each school unit with students with SEN in inclusive settings have difficulty to coordinate but not impossible.

3.5 Influence of internal factors on behavior and learning of students with SEN

Interaction between biological and behavioral characteristics of students with SEN

According to Research hypothesis N1 (H1) in the period of adolescence within-group differences in behavior and learning competence in the clinically distinct categories SEN greatly increase and the influence of the "type of disability" has limited. We expect that at this age stage of the development the students with SEN fall into more global categories based on reorganization of the inner connections between new physical status – socio-emotional status – social adaptations - learning competence. Leading clinical symptoms of disorders has more limited influence on student global child development and learning in comparison with other biological factors.

We study the influence of *the gender* on socio-emotional performance of students with SEN in secondary school and expect to receive argumentation for new within-group differences or distribution in three behavior subcategories-typical, borderline and clinical. It has applied Pearson's χ^2 test of independence has used.

The gender of the children is independent of the severity that characterizes their behavior in the case of emotional problems and anxiety problems. It has observed that gender is significantly related to the students' behavior regarding physical problems ($\chi^2 (2)=6.791$, $p=0.034$), problems of lack of attention and hyperactivity ($\chi^2 (2)=14.492$, $p=0.001$), oppositional problems ($\chi^2 (2)=10.949$, $p=0.004$) and conduct problems ($\chi^2 (2)=9.548$, $p=0.008$). Specifically, girls show almost three times the rate of borderline behavior in the category of physical problems compared to boys (17.2% versus 5.6%);

- *Attention deficit and hyperactivity problems* have 84.5% of girls and almost half of boys (56.3%). In contrast, the percentage of boys is multiple times that of girls both in the case of *borderline behavior* (19% vs. 8.6%) and in the case of *clinical behavior* (24.6%

vs. 6.9%);

- In oppositional problems, girls also have a higher frequency of normative behavior (89.7%) than boys (66.9%), and Boys are a significantly higher risk group for borderline and clinical behavior (28.9%), in compared to girls (8.6%).
- Borderline (10.6%) and clinical (22.5%) levels of antisocial behavior have found in three times more boys than girls (3.4% and 6.9% respectively).

Impact of the internal factors on learning competence of students with SEN

In **research hypothesis 2** we expect that internal factors (biological, cognitive, emotional, behavioral characteristics) significantly affect learning competence of adolescent students with SEN that attend inclusive classrooms. By statistical procedure, we check, if the distribution of the students into typical, borderline and clinical c terms of categories of their emotional-behavioral performance significantly affects their learning and school performance. It has expected that students with higher scores on problematic behavior will score lower on learning skills.

Controls of students' difference in learning performance based on behavioral image that have used. We performed difference tests to determine whether students with different behavioral profiles (typical, borderline, and clinical) differ significantly in terms of their learning performance.

A possibility for significant differentiation of the three groups of students and correlations with the performance in basic school skills for learning, the performance in exercises and tests and the performance in school subjects has studied separately. The statistical tests aim to verify the second research hypothesis. It has used the non-parametric Kruskal-Wallis. At least one group violates the condition of normality of values in the corresponding performance indicator under study.

Students differ significantly in their performance in basic skills depending on the severity of their attention deficit and hyperactivity problems. The similarity depend has identified between basic skills and oppositional problems. In both cases, the students with typical behavior demonstrate the best level in basic skills.

Analysis shows that the student performance in exercises and tests vary depending on the range of emotional problems, attention deficit and hyperactivity problems and adversarial/challenging problems that students with SEN. Therefore, the students with typical parameters regarding the above behavioral characteristics have high score and a better performance in exercises and written tests. The worst performance has observed among

students with clinical behavior symptomatic.

Finally, the results show that student's performance in school subjects statistical significantly *depends on emotional status, state of attention and oppositional behavior*. The students with mild emotional problems as well as those without Hyperactivity/Attention deficit and those without adversarial/challenging problems have the highest scores among the rest of studied students with SEN. The worst performance in the courses has found among the students who manifest the clinical degree.

3.6. Impact of the specific socio-pedagogical factors on learning competence of students with SEN

The collected empirical data has analyzed and discussed in the context of the research Hypothesis N3 (H3) that *specific socio-pedagogical factors* affect significantly, but differently basic components in *learning competence* of adolescent students with SEN in inclusive settings. More specifically, it has expected that:

- ✚ The factor **Supportive family environment** to have significant impact on learning competence of adolescent students with SEN;
- ✚ The factor **Support structures for parents** to have impact on “parental interest” in helping their children with SEN;
- ✚ The factor **Special education teachers with more years of experience** to have significant impact on the management of a team spirit, a climate of co-operation and respect for the uniqueness of the students with SEN;
- ✚ The **Level of specialization in Special Education** to have a significant impact on feeling of confidence of scientific knowledge regarding the needs of the students they support;
- ✚ The factor **Permanent teacher** to have significant impact on creation of “an available inclusive classroom” for the students with SEN and on management of a team spirit, a climate of cooperation and respect for the uniqueness of the students with SEN;
- ✚ The factor **Number of students with SEN** that teachers supports to have a significant impact on their time for covering the needs of each student with SEN that attends the inclusive settings;
- ✚ The factor **Working years of the special education teachers** in the same inclusive setting to have a significant impact on the degree of cultivation of a team spirit they feel they control/manage in the school community.

Correlations were sought with each of the learning indicators (basic skills performance, test performance,

course performance) Due to the lack of a normal distribution in the values, correlation was performed using non-parametric statistical procedures. In checking whether students who live in a supportive family environment differ significantly in terms of their performance on the three factors related to learning (basic skills, exercises and tests, subjects), the Kruskal-Wallis non-parametric test was applied. A statistically significant difference in academic achievement is sought between the 3 categories of students regarding the presence of a supportive family environment on the 3-point scale - "This does not apply to the student", "This applies somewhat or sometimes", "This applies a lot or very often'). The results have presented in table. 16.

TABLE 16			
CORRELATION OF ACADEMIC ACHIEVEMENTS OF THE STUDENTS WITH THE SCHOOL, FAMILY AND COMMUNITY CONDITIONS IN THE LIVE			
	PERFORMANCE IN BASIC SKILLS rate_1	PERFORMANCE IN EXERCISES AND TESTS rate_2	PERFORMANCE IN SCHOOL SUBJECTS rate_3
FAMILY INFLUENCE	.255 (<.001)	.384 (<.001)	.371 (<.001)
HUMAN RESOURCES	.118 (.095)	.260 (<.001)	.272 (<.001)
EDUCATIONAL TOOLS	.068 (.340)	.233 (<.001)	.196 (.005)
NEGATIVE INFLUENCE OF SOCIETY	-.137 (.052)	-.140 (.049)	-.232 (.001)
POSITIVE INFLUENCE OF SOCIETY	.150 (.034)	.347 (<.001)	.344 (<.001)
SUPPORT AFTER SCHOOL	.060 (.402)	.213 (.002)	.183 (.009)

A strong influence of the family on all parameters measuring the academic progress of students has found. The presence of a supportive family environment of the student and the availability of school psychological support to the parents of the student with SEN. It is worth noting that the greatest differences in relative frequencies have observed in cases where there is strong school psychological support for the families of students with SEN. It was found that only 13.6% of families do not provide support to students, while 65.9% support children with SEN. In cases where the school does not offer psychological support, the students' families have allocated in terms of child support. In the study, we seek to find out whether schools attended by students with SEN differ significantly in terms of the general experience of teachers in special education and the presence of an atmosphere of teamwork, cooperation and respect for students with SEN. As it turned out, the 3 groups of teachers defined by the presence of respect, cooperation and teamwork in the school where they teach - "It does not apply to the student", "Sometimes it applies" and "It very or very often applies ") do not differ significantly in the distribution of years of professional experience in special education ($H=.003$, $p<.958$).

An attempt has made to determine whether there is a significant relationship between special education teachers' specialization and their belief that they have sufficient knowledge of the educational needs of the student with SEN. The test of independence was conducted with the Monte Carlo method

and the two variables were found to be independent ($X^2(4) = 4.009, p < .336$).

The information about the existence of a significant relationship between the working relationships of the special education teacher and the presence of team spirit, an atmosphere of cooperation and respect for the diversity of the student with SEN within the school unit has statistically confirmed. As revealed by the corresponding test of independence, the two variables are independent of each other ($X^2(2) = 4.324, p < .115$).

Pearson's X^2 test of independence examines the relationship between a teacher's years of service (both in special education and in the integration department) and the presence of team spirit, cooperation, and respect for the student with SEN within the school unit. The existence of teamwork, respect and cooperation was found to be independent of the teacher's tenure in special education ($X^2(6) = 5.337, p < .501$) and of his entire tenure in a special inclusive setting ($X^2(4) = 5.195, p < .268$).

Inner-group differences in the behavior profile of adolescent students with SEN and the effect of the learning support from the family, school, and society

As we discovered three significant different behavioral profiles of studies with expert assessment student sample - typical, borderline, clinical, it has conducted statistical checking, if the impact of socio-pedagogical support of student learning have a different effect each of these groups. The non-parametric Kruskal-Wallis test has performed to inform for level of difference between effects of the family, school and social environment support. The use of this method has imperative since in each control at least one student group does not satisfy the condition of normality of the total scores of the specific factor (family, school, society) under consideration. Students with different levels of emotional problems show a significant difference in terms of the support they receive from their *family* ($H = 6.069, p < .048$). Specifically, the greatest support has observed among students with a typical picture regarding emotional problems.

An even more significant difference as found between the three groups of students regarding Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder. Students with more severe problems receive significantly less family support than students who are within the normative picture in these personality domains.

It has tested whether the three groups of students differed significantly in terms of teachers' summary assessment of the availability of appropriate human and school resources supporting the learning of students with SEN. The applied non-parametric Kruskal-Wallis test gives grounds for the conclusion that teachers' satisfaction with the availability of appropriate human and school resources varies according to the severity of problems in students' behavioral

profiles (normative, borderline, clinical).

Statistically significant differentiation between the three subgroups of students has found in terms of Anxiety problems, Attention Deficit Hyperactivity problems, Oppositional problems and Conduct problems. It is worth noting that in the last three cases, the groups of students with normative or borderline behavior show an approximately identical mean value in terms of teacher satisfaction with the school's human resources, while the lowest value has found in the group of students with a clinical picture. The data show that the behavioral profile of the student with SEN has not statistically significantly affected by the means of the educational process.

Next, it has studied whether the three groups of students present a significant difference in terms of the overall score noted by the teachers in satisfaction with the existence of appropriate human resources and tools for the education of students with SEN. Once again, tests have performed using the non-parametric Kruskal-Wallis test. Teachers' satisfaction with school-related human resources varies significantly depending on the severity of the problems faced by students.

The significant differentiation has noted only between the three groups of students that have formed regarding anxiety problems, attention deficit and hyperactivity problems, oppositional problems and conduct problems. It is worth noting that in the last three cases the groups of students with typical or borderline behavior show approximately the same average value in terms of teachers' satisfaction with the school's human resources, while the lowest value has found in the group of students with a clinical picture. The data show that the behavior profile of the student with SEN has not significantly influenced from the tools of the educational process.

The conducted statistical analysis check the degree of influence of each of the factors that express society's attitude on behavior profile of student with SEN attending secondary school. It has discovered a significant difference depending on the severity of the behavioral problems faced by students with SEN. The negative effects of society have significantly stronger in students with more serious behavioral deviations. There is no significant influence of negative climate of society to secondary school students with SEN with typical behavioral characteristics or it is relatively mild. The positive attitude of the social environment has approximately the same influences for all studied students regardless of the severity of emotional, physical problems, and anxiety problems they face. As whole the results point that the students with SEN with typical behavioral characteristics receive significantly more support from the social environment than those with a clinical behavior symptomatic. In the case of

support after the end of school life, it is interesting that the students with typical and those with clinical indication of problems of attention deficit and hyperactivity receive the most support.

3.7 Impact of the interaction between internal and socio-pedagogical factor on learning competence of students with SEN

In order to investigate validity of the **Research hypotheses N4**, that *interaction between internal and socio-pedagogical factors have significant impact on learning competence of adolescent students with SEN that attend inclusive classrooms*, tests for correlation between total scores on learning performance and support from school, environment and family have used. It have carried out to establish whether learning performance of students with SEN can be predicted by their behavioral profile and the attitude towards them by school, family and society. It have prepared three regression models with the *dependent* variable - the total score recorded in the 3 sub-factors of learning performance (basic skills, exercises and tests, school subjects). In each model, the factors that express behavior problems (emotional problems, anxiety problems, physical problems, lack of attention and hyperactivity, oppositional problems, conduct problems) and the factors concerning the attitude of the family, the school (human factor, tools) and society (positive attitude, negative attitude, support after school) have taken as *independent variables*. The results are presented in Table 17.

The first regression model concerned the attempt to predict the performance of students with SEN in **basic skills**. As it has emerged, the model has significant for predicting the dependent variable although it explains only 12.7% of the variability of the dependent variable. The only factors that have considered significant for predicting the dependent variable have the existence of physical problems ($t(199)=-2.286$, $p<.023$) and the influence of the family ($t(199)=2.268$, $p<.024$). The final model has then developed in which only the independent variables found have significant in predicting performance in basic skills were included. Once again the model has found have significant for predicting the dependent variable ($F(3,197)=10.380$, $p<.001$) although it only explains 9.5% of the variability in its values. In fact, the effect of the family has the most important for the prediction of the specific learning performance.

The next model concerned the prediction of the performance of students with SEN in **exercises and test**. The only factors that have significant in predicting the dependent variable are the existence of emotional problems, the existence of attention deficit/hyperactivity problems, family influence and educational tools.

TABLE 17

MODEL FOR PREDICTING THE PERFORMANCE OF STUDENTS WITH SEN IN BASIC SKILLS

MODEL	INDEPENDENT VARIABLES	B	S.E.	β	t	P
INITIAL	Constant	2.814	.563		4.997	<.001
	Depressive problems	-.008	.039	-.017	-.194	.846
	Anxiety problems	.092	.068	.123	1.348	.179
	Somatic problems	-.152	.067	-.173	-2.286	.023
	Attention Deficit / Hyperactivity problems	-.039	.026	-.171	-1.468	.144
	Oppositional Defiant problems	-.059	.082	-.115	-.713	.477
	Conduct problems	.037	.041	.143	.907	.365
	Family support	.081	.036	.236	2.268	.024
	Human resources in School	-.011	.039	-.031	-.272	.786
	Education tools	.046	.073	.060	.625	.533
	Society negative effect	-.043	.063	-.058	-.674	.501
	Society	-0.73	.122	-.071	-.598	.550

The final model that has included only these variables is important for the prediction of performance in exercises and tests ($F(4,195) = 15.315, p < 0.001$) and explains 23.9% of the variability of its values. The children characterized by more emotional problems and problems with attention deficit and hyperactivity have lower learning performance. The same has the case with children who do not receive support from the family. The students employed in schools with a lack of educational tools, according to the opinion of the educational departments of inclusive settings, face serious difficulties in exercises and tests. The influence of the family has the most decisive for the performance of the student with SEN ($B = .239$).

The **score on behavioral problems** and family, school, and community attitudes have used to predict student achievement in school subjects.

The original model showed that the only variables that significantly affect the performance of students with SEN are emotional problems, attention deficit/hyperactivity disorder and the family. The final model has found to be significant for the prediction of the dependent variable ($F(3,196) = 18.692, p < 0.001$) and explains 22.2% of the variability of its values. The influence of the family is the most important for achieving high academic performance. The emotional problems as well as the attention deficit/hyperactivity problems make it more and more difficult to achieve high academic performance as they become more intense.

3.8 Discussion

The presented quantitative results of the applied methods of descriptive statistics and statistical inference allow a discussion in relation to the formulated scientific assumptions and to the findings of other authors on the problem under consideration.

Regarding the first research hypothesis (X1), the results show that in the adolescent period, the intragroup differences between students in each of the official diagnostic categories of SEN widen. Contrasts emerge in individual emotional-behavioral profiles recognized as normative, borderline, or clinical. In this context, the categorization of students with SEN goes beyond the criterion "type of sensory or neurodevelopmental disorder" and is based on new criteria for mental health - mental disorder. The crisis of adolescence arises from a universal reorganization of the internal connections between a new physical status - a new socio-emotional status - a new social adaptation and growths of learning competences. It is logical that dealing with the obstacles of this age crisis is more complicated for students with SEN, but the risks of emotional behavioral disorders are not alien to other students as well.

The occurrence of accompanying emotional- behavioral disorders in early sensory and neurodevelopmental disorders has considered in ICD-10 and ICD-11. In the present study, it has empirically argued that the adolescent age is a critical period for their spread among all categories of students with SEN. Normative emotional-behavioral profiles in the population of students with SEN are dominant, but widely presented emotional and behavioral problems in a clinically pronounced degree signal a need for timely educational measures to prevent or deal with them.

In addition to age, the study also found a significant influence of the biological factor "gender". The contrast between boys and girls in the distribution of normative, borderline and clinical patterns on the scales of Physical Problems, Attention Problems, Oppositional Behavior and Antisocial Behavior had statistically proven. If the frequency of the borderline degree of manifestation of somatic symptoms without objective reasons has a significantly higher share in girls, then on the remaining scales the borderline and clinical degrees have a higher frequency of manifestation in young men. This finding corresponds with the generalizations of Simpson et al. (2009) that boys are more prone to externalizing type of emotional behavioral disorders, which manifest in external symptoms significantly more easily identified by teachers and parents, compared to the internal symptomatology of anxiety disorders, more typical for girls.

An interesting fact is the gender distribution of our random sample of students with SEN included in mass education structures. 71% of the boys and 29% of the girls got into it, i.e. boys are almost 2/3 of all assessed students. It could be interpreted in the context that boys with SEN probably have a better potential for learning and inclusion in the mainstream school class of gymnasiums and lyceums. On the other hand, the clearly defined dominance of risks and clinically manifested problems in attention, oppositional and antisocial behavior in boys at the end of the school period limits inclusive processes, which according to Kokaridas et al (2008) are important for social adaptation and professional realization in the next stage from their life path.

Regarding Hypothesis N2, the empirical generalizations argue in a number of aspects the expectations that internal factors (biological, cognitive, emotional, behavioral characteristics) have a general but also a differentiated influence on the learning competencies and school achievements of adolescents with SEN from the inclusive environment of the mainstream secondary school. In order of importance, expert evaluations of special educators focus on the primary role of cognitive factors, followed by emotional-behavioral and biological factors.

For the effects of the emotional-behavioral factor, the importance of a number of differentiated influences has established. Statistical tests showed that attention characteristics and oppositional behavior were significant contrast factors of school learning skills. In addition to the characteristics of attention and oppositional problems, a significant effect of emotional status related to affective (depressive) states has found in the performance of students on academic tests and their achievements in academic subjects. Students with borderline and clinical profiles on these scales have severely reduced characteristics of reading and writing

skills, coping with ongoing learning exercises and tests, and low achievement in academic subjects.

In the specialized literature, there are no studies of the interrelationships between emotional and behavioral disorders acquired in adolescence and the learning processes of students with SEN in a general education environment. Regarding the phenomenon of Attention Deficit and Hyperactivity Disorder, ICD-11 (2018) recently substantiated its essential characteristics of a disorder in the development of the nervous system or a neurocognitive developmental disorder. This means that problems accompany students from the early years of their childhood, but have probably not recognized in the diagnostic process. In this context, the established persistent negative effect on learning and school achievements of students with SEN can rather explained by a long-term effect of cognitive factors. A number of studies have been reported in the literature on the consequences of attention deficits, related to serious difficulties in mastering reading and writing skills, as well as students' coping with current academic tasks already at primary school age (Doernberg & Hollander, 2016; Popzlateva, 2020, Koutsoklenis & Honkasilta, 2023).

The findings of progressively increasing difficulties of these students are in line with the research of Mavropalias, Alevriadou & Rachanioti (2021), who discuss them in the context of understanding the learning content, new vocabulary and terminology in school textbooks.

The finding of the dissertation research on the contrast that the co-occurring affective (depressive type) and oppositional behavioral disorders create in the learning profiles and school achievements of students with SEN from the secondary mass school is new knowledge and a definite contribution to the theory and practice of Special Education.

The influence of the family, school and wider social environment on the learning, school achievement and social inclusion of students with SEN is a traditional subject of research interests in Special Education. In hypothesis #3 of the dissertation research, general expectations have formulated, but attention has also directed to little-researched interrelationships resulting from new policies and reforms for inclusive and quality education of students with SEN in adolescence and middle school. In relation to the issue of the multifactorial determination of the learning processes and competencies of the students with SEN in the adolescent age of the mainstream school, the empirical data support the main assumptions about the influences of external social factors, but also accumulate evidence of hitherto unknown effects. New conditions in the Greek education system have covered, such as the expanded focus on family resources, the new professional responsibilities of the special

educator in the middle course of the mass school, direct and indirect effects of the implemented educational policies and reforms.

Regarding the influence of the family factor, convincing empirical evidence obtained that the focus of modern educational reforms on creating a family environment that supports the student's learning is extremely productive for adolescents with SEN educated in a general education environment. The support provided by the family environment has reflected in statistically significant improvements in all studied parameters - basic school skills, performance in academic exercises and tests, achievements in academic subjects. A significant effect of newly created structures and the activities of school specialists to support parents by expanding their motivation actively contribute to their children's learning and educational process has recognized.

The realized role of a school psychologist in assisting the family has as significantly correlated with improvements in the supportive functions for the role of parents as a catalyst between the direction of the school performance of students and the importance of parental involvement in the school reality (Penteri & Petrogiannis, 2013; Larocque, Kleiman & Darling, 2011; Gonida & Urban, 2007; Brantdt, 2006; Otani, 2019; Llamas & Tuazon, 2016; Niia et al, 2015; Rogers et al., 2009; Li et al., 2019). Parental involvement has defined as a core dimension of the school-family relationship (Epstein, 1995; Avdali, 1989; Hoover-Dempsey et al., 2005; G Larocque, Kleiman & Darling, 2011; Penteri & Petrogiannis, 2013; Li, Hu, Ge & Auden, 2019; Otani, 2019). However, Myklebust & Myklebust (2017) outline that parents usually do not have the necessary effective support for students with SEN and this increases the risks of more psychosocial difficulties for adolescents. Povedano-Diaz et al (2020) that the quality of the parent-child relationship affects adolescents' life satisfaction both directly and indirectly through their self-esteem and that, the quality of the classroom climate affects adolescents' life satisfaction through their self-image.

Regarding the school environment, the study shows that positive changes have started, but they have not yet reached their optimality. Findings made for the adequacy of the professional role of psychologists, for supporting the teacher's assistant, for management and suitability of classrooms, for synchronization of national planning and individual plans, additional training programs for lack of stigma towards students vary within 50% of the responses. Of interest is the relatively high assessment of the school's psychological climate and the spirit of cooperation created, as well as the presence of reliable resources, which confirms the improvement of the school performance of students with SEN.

Overall, these results are encouraging and comparable to those of Mavropalias,

Alevriadou & Rachanioti (2021) who highlighted that the benefits of attending a mainstream class are collaboration, reduced stigma, increased level of understanding and respect from their peers, as well as social classroom acceptance. On the other hand, Kourkoutas, Stavrou & Loizidou (2017) emphasize that factors hindering inclusion have mostly related to practical difficulties such as overcrowded classrooms, delayed diagnoses and lack of reliable assessment criteria. The importance of the digital transformation of education is emphasized with the need for new skills, equipment, infrastructure, services and intensive training of teachers, parents and all who maintain contact with students with SEN, as well as the need for cooperation, commitment, communication, interaction, strategies for learning and problem solving and metacognitive skills (Parmigiani et al., 2020).

The professional roles of the special educator have placed in a key position among the pedagogical factors studied. The significance of the effects of the professional activities of the special educator on the cultivation of team spirit, a climate of cooperation and respect for the uniqueness of students with SEN in the school environment was tested. In this context, hypotheses that are more specific have been raised about the importance of the acquired educational degree, the total duration of the professional experience of the special pedagogue, duration of his professional activity in one educational institution. It is interesting to note that the usual expectations of marked contrasts from the action of these factors have not confirmed. Statistics (Monte Carlo Test of Independence of Variables) indicated that educational level (bachelor's, master's, or doctorate) in Special Education did not contrast special educators on confidence in scientific knowledge about the special needs of middle school students. All the teachers participating in the research are confident in their scientific knowledge about the special needs of students and ways to support them. There was also no significant correlation of work experience with the ability to manage and create team spirit, an atmosphere of cooperation, and respect for the uniqueness of students with SEN in the school environment. This skill is inherent in special educators with different lengths of professional experience. Finally, the empirical evidence is indicative of a lack of significant positive relationship between the factor Permanent teacher in an educational institution and the skills of creating an "accessible inclusive classroom" for students with SEN, as well as managing team spirit, a collaborative atmosphere and respect for the uniqueness of the student.

Koutrouba, Vamvakari & Theodoropoulos (2008) argue that Greek secondary school teachers' interest in including students with SEN increases when they have access to specialist knowledge, additional training and incentives to acquire professional qualifications. It is also emphasized that teachers need motivation to change their teaching and learning in the

light of new ideas in educational theory and practice (Mavropoulou, Pandeliadu, 2000; Eldar et al., 2010; Koutrouba, Vamvakari & Theodoropoulos, 2008). However, our research did not find correlations between the different levels of educational qualification and the sense of confidence in the scientific knowledge that teachers have. A likely explanation for this discrepancy in research findings is that the dominant majority of teachers in our sample had a master's degree in Special Education (87%), and 7% of special educators had a doctoral degree. From this standpoint, our results correspond with research by Avramidis, Bayliss & Burden (2000), Avramidis et al, (2019), who argue that teachers with a high level of university education have attitudes that are more positive and are more confident in their knowledge and skills to meet the demands of students with SEN.

The empirical information obtained from a representative sample of special education teachers and the collected corpus of their assessments of students with SEN, and their educational and social environment sets the stage of searching for scientific information and the contribution to wider social factors in Greece, and for wider inclusion in new social groups, and for post-school independent life.

The facts inferred about the dominance of social isolation or rejection of the student with SEN in the wider social environment, and about the insufficiency of social and health services in the afternoon hours, as well as about a wider scope of vocational rehabilitation after leaving school, and about still existing limitations in financial support. All this indicate that problems in inclusive environments that have still present. They are in line with the theoretical framework arguing for the effectiveness of Greek mass inclusive environments (Lampropoulou-Padeliadou, 1995; Pandeliadou, 2004; Anastasiou-Polychronopoulou, 2009; Antoniou, Polychroni & Kotroni, 2009; Kourkoutas, Stavrou & Loizidou, 2017; Tryfon et al., 2021; Mavropalias, Alevriadou & Rachanioti, 2021). Educational conditions deteriorate under special circumstances such as the example of COVID-19, which affected and affected the social, family and school environment (Azoulay, 2020; Ebadi & Heidaranlu, 2020; Tadesse et al., 2020; Tsibidaki, 2021; 2020; Pokhrel & Chhetri, 2021). Kourkoutas, Stavrou & Loizidou (2017) highlight that factors impeding inclusion have mostly related to practical difficulties, such as overcrowded classrooms, delayed diagnoses and lack of reliable assessment measures.

The holistic paradigm discussed in the theoretical framework points to the paramount need to embed rehabilitation services in community development activities. However, our research has confirmed that various social problems exacerbate the accumulated background of learning difficulties.

The verification of Hypothesis N4 shows that the learning effectiveness of students with

SEN can be predicted only by a part of the studied interactions between the factors of the student's behavioral profile and his social environment - school, family and society. Among these factors with a statistically proven significant impact on the quality of learning in middle school age are Physical problems, Attention problems and hyperactivity, Educational resources, Family support are precisely these significant factors with a strong effect on the quality of learning. The fewer problems students encounter and the more family support they receive, the better they achieve in the mainstream school environment. When controlling for the relationships between the school environment and behavioral problems presented by students with SEN, it appeared that in schools that have supported by more teaching staff, students have fewer behavioral problems.

The influence of the family is particularly important in achieving high academic success rates. Students who receive a high degree of support, parents have frequent contact with special education teachers. Students with more family support have a significantly better profile in basic skills, exercises and tests, as well as in lessons at school. The families of students with SEN who received more school psychological support were the ones who provided the most support to the students. Students with fewer physical problems and more family support are the ones who perform best in this area. Students with fewer problems with attention and hyperactivity received more support from the family environment and from schools with adequate educational methods managed to perform better in exercises and written tests. Achievement in school subjects is higher for students who receive more family support and face fewer physical and attention-deficit/hyperactivity problems. The presence of respect for students with SEN appears to be independent of the working relationships of teachers in the school unit. The presence of teamwork, an atmosphere of cooperation and respect for students with SEN is independent of both the services of the teacher in special education and, in particular, in the specific inclusive environment. The adequacy of the time available to teachers to address the behavioral, emotional, and cognitive needs of students with SEN appears significantly related to the number of students they have to support. Teachers with the fewest students with SEN are the most satisfied with the time they have to work with students. In the school itself, the presence of a supportive climate of team spirit, cooperation and respect for students with SEN.

Society's reaction has a significant impact on the behavior of students with SEN. The research shows that society exerts a greater negative influence on students with different behavior. Positive social effects varied significantly only for attention-deficit/hyperactivity problems, oppositional reaction problems, and conduct problems. Students with parameters of

typical behavior are under a greater positive influence from the social environment in which they are integrated. Society's reaction has a significant impact on the behavior of students with SEN. For students with atypical behavior, the influence of society has a greater negative effect.

CONCLUSION

The holistic approach is an innovative educational view that changes traditional positions in science and practice (Krippner, 1991; Lovat et al., 2010; 2011; Mahmoudi et al., 2012). It is an inclusive movement and a comprehensive approach to teaching where educators strive to meet all the emotional, social, ethical and academic needs of students in an inclusive format of education. The idea is to cover all parameters of the student, considered as part of the whole, with which improvements in the results and benefits for students with SEN are expected (Forbes, 2003; Popzlateva, 2017; Miller, 1992; 2000; Mehta, 2020; Yan et al, 2021 et al.).

Under the auspices of the holistic paradigm, the theoretical framework of the dissertation focuses systematically on the factors that influence students with SEN from inclusive secondary education environments: family, school environment, community, and all important social circumstances, - educational, financial and national policy, legislative framework on inclusion, cultural values (Demir & Kok, 2012). Significant issues and empirical facts have systematized in the following main areas:

- ✓ Family environment of students with SEN, effects of parenting styles, role of parental involvement on their learning for school achievement (Epstein, 1995; Avdali, 1989; Hoover-Dempsey et al., 2005; Brantdt, 2006; Gonida & Urban , 2007; Larocque, Kleiman & Darling, 2011; Penteri & Petrogiannis, 2013; Li, Hu, Ge & Auden, 2019; Otani, 2019);
- ✓ Diagnosis and identification of special educational needs, teaching styles, educational process, teacher readiness and needs, interaction between family and school environments, conflicting teaching conditions in special social circumstances such as the COVID-19 pandemic (Asbury et al., 2021);
- ✓ Influences of society and current policies in Greece on inclusive education (Syriopoulou - Delli, 2010).

The significance of the studied issue has determined by the need for new strategies to assess the current state and potential of each student with SEN (Forrest et al., 2013). Real scientific and practical problems have arisen in various aspects of the holistic paradigm in an inclusive environment, because behind the student with SEN are the problems of the family, educational and social systems that interact.

Empirical data from the dissertation study provide evidence to support the main research thesis that in the period of adolescence (secondary school), the essential biological, cognitive and personal characteristics of students with SEN and the characteristics of their socio-pedagogical development situation undergo qualitative changes, which reflects and on their interaction. This updates the problem of their differentiated recognition in the context of the holistic educational model.

It could be argued that the reorganization of the interaction between the new physical status - psycho-emotional status - social status - learning competences is the main source of significant changes in the individual profiles of problems and opportunities of students with SEN educated in mainstream school. The study identified emotional-behavioral profiles of a normative, borderline, and clinical nature that showed identical distributions in each of the SOP categories. This is an indicator of a limited effect of the biological factor "type of impairment". Among the recognized symptom complexes with clinical and borderline degree of manifestations, the frequency of anxiety disorders, affective disorders and attention disorders is highest. In addition to the risks of age for the appearance of clinical symptoms in the emotional-behavioral sphere, the study revealed a significant influence of the biological factor "gender". Significant differences have been found in the risk of physical (somatic) problems in girls compared to young men. On the other hand, clinical disorders of attention, oppositional and conductive type of behavioral disorder have been observed to a significantly higher degree in youth with SEN from mainstream schools. It is becoming clear that the middle school needs to broaden the scope of educational strategies with new ways to early prevent or address the mental health risks of students with SEN.

The dissertation research brings out both a strong general influence of socio-pedagogical factors in relation to the basic components of learning competence, as well as a differentiated effect. A strong relationship has been observed between the learning outcomes of students with SEN and the support they receive from family, school and society. The "family" factor is the most fundamental for students with SEN in terms of high school results, and in this respect the family-supportive school structures created make a significant contribution. The obtained data on the achievement of a good psychological climate and a spirit of cooperation in the mass school is optimistic, but also reveals serious facts about unresolved problems with the professional status of special educators, mainly in terms of their workload. Although the empirical study presents a number of arguments for the existence of a supportive learning environment in mainstream secondary school, there is also evidence of unresolved issues in students' everyday family, school and social lives.

Recommendations for educational practices

The results of the study summarize a complex of factors that influence the pattern of interaction of the special educator with the student and his parents, with the school authorities and with other specialists (psychologists, social workers and medical personnel). Priorities and factors in the education of students with SEN in secondary school, which depend on the successful professional work of the special educator, have identified. The proposed analyzes and findings point to the fact that up to the present moment (school year 2022-2023) the creation of a hierarchical organization between educational policies, educational structures, educational activities, pedagogues and mental health specialists is at an initial stage and has started to realize in secondary school. A particular challenge is achieving optimal coordination between the Ministry of Education, special education counselors, K.E.D.A.S.Y., senior, mainstream and special education teachers, school psychologists and mental health services. In the context of accelerating these processes, we could direct attention to problems we recognize and opportunities for improvement. After them are the following:

- ✓ Creating school and social conditions for a more favorable family and social environment for students with SEN, such as a school psychological service for parents, students, teachers, local community. Educating parents to support their child in acquiring skills "learning to learn", "learning to do", "learning to live independently" are an essential part of holistic strategies in education;
- ✓ Improving the synchronization between the national curriculum and the student's individualized educational program, between the identified general and special educational needs of the student. The implementation of this guideline implies a sustainable model of cooperation between special education consultants, senior teachers, school specialists in inclusive education, special education counselors and K.E.D.A.S.Y., parents, school and local social community, any type of community mental health services and school psychological service ;
- ✓ Designing and offering in educational practice reliable tools and standards for assessment and dynamic tracking of progress in the knowledge and skills of students with SEN of all age groups;
- ✓ Conceptualize, construct, and implement realistic intervention models that predict variable parameters of time needed to address each student's behavioral, emotional, cognitive, and academic needs;
- ✓ Understanding the need for regular or additional support of educational and social activities with students with SEN from a new type of specialist, such as a special

education consultant and teacher assistants;

- ✓ Educational efforts to change stereotypical social prejudices towards the potential opportunities of students with SEN;
- ✓ Creating organizational structures that offer experience and employment opportunities adapted to the qualifications of the post-school student.

Every school community is a living organism with a multi-component interaction between students, parents, teachers, counselors and all those who have responsible positions in the educational hierarchy. Desired outcomes are difficult to assess in technocratic terms, as the steps of progress in the field of special education may small, but they are valuable and crucial to the fate of every child with SEN.

The primary priority of the holistic paradigm for families, schools and social environments is to ensure that students with SEN are active participants in all aspects of their lives and that they make meaningful progress in their life experiences.

Limitations of the study

Limitations in the interpretation of the received scientific data on the systemic effect of internal and external factors on the active learning processes of adolescents with SEN stem from the fact that the information has collected only from a sample of special education teachers in secondary schools. The positions of general education teachers, school principals, special pedagogical advisers and representatives of ministries, as well as the opinion of parents and students themselves, are not covered. Some limitations in the interpretation of scientific facts stem from the educational qualifications of special educators. Although the sample is random, there is a predominance of special educators with advanced degrees in Special Education - Master's and Doctorate.

However, the validity and reliability of the information from the dissertation research has optimally ensured by the way of planning, the strategies for collecting the empirical data and their statistical processing.

In future research, it would be especially useful to expand the sources of information on the psychological, educational and social situation of students with SEN in the secondary mass school, as well as to offer comparisons and contrasts between the inclusive environment of gymnasiums and lyceums.

Scientific contributions of the dissertation work

The dissertation focuses on a holistic approach to the development of learning skills in the special population of students with SEN attending mainstream secondary schools. This is the

new knowledge in the field of Special Pedagogy, aimed at the readiness of the modern education system to manage and solve learning problems arising from the interactions between the internal biological, cognitive, emotional, behavioral characteristics of students, the school environment, the involvement of parents and the social environment.

The scientific achievements of the dissertation research could be presented in three vocal aspects: theoretical, methodological and scientific-applied.

A) Contributions of a theoretical nature

The theoretical contributions find expression in the systematized arguments for the advantages of the holistic paradigm in Special Education to optimally support the learning skills of students with SEN. The position has defended that the current assessment of difficulties and potentials for acquiring new learning skills by students with SEN is the key point that guides special education teachers (special pedagogues) in choosing adequate methods and strategies for coordinating activities of the family, the school and society, and creating a holistic culture for learning and teaching.

The study identified an increased risk for borderline and clinical symptoms in the emotional-behavioral sphere during adolescence, which are a factor in the school achievements of students with SEN and should be the focus of mental health specialists, but also of the family and the school.

The conducted research offers theoretical and own empirical evidence in defense of the scientific fact that meeting the complex of biological, emotional, behavioral, parental, educational and social needs of students with SEN has strongly linked to close cooperation between the family, the school and the social environment. A holistic strategy in special education has identified, manifested through trends to adapt educational goals to the biological, emotional, behavioral and cognitive needs of students with SEN, to an expanded awareness and partial meeting of parental needs, as well as ongoing reforms in the modern school environment and social communities.

B) Methodological contributions

A scientific contribution is the developed multifactorial methodology for extracting empirical information from representative samples of special educators and students with SEN taught in secondary mass schools. The applied quantitative strategies and statistical methods ensure the reliability of the conclusions drawn about the influence of the differentiated interactions between internal and external factors on the learning ability of students with SEN in adolescence. Such comprehensive information is not available in other studies in the field of special pedagogy.

The constructed research toolkit has based on modern strategies for expert evaluation, method of scaled responses and collection of structured empirical information on specific biological, behavioral, emotional and cognitive characteristics of adolescents with SEN, but also on the readiness of the educational, parental and social environment to meet current needs in a holistic manner. The high values in the validity and reliability check according to the Cronbach-criteria expand the possibilities of applying the constructed research instrument in other scientific studies, guaranteeing the objectivity of collected empirical information.

C) Scientific and applied contributions

The empirical research accumulates scientific evidence of positive effects of the application of the holistic paradigm through the current reforms in the secondary school level of the education system in Greece, but also a feedback on the difficulties and problems solving in the near future. Special educators have placed at the center of the educational process of adolescents with SEN and their professional activities imply new and broader competences to identify the current and immediate needs of students and to synchronize activities to meet them. The author's developed "Questionnaire for inclusion of students with SEN in secondary mass schools" has based on the philosophy of the holistic paradigm and could use for ongoing assessment of the microsystem and microsystem of any inclusive environment, as well as for setting realistic and objective educational goals through every academic year.

PUBLICATIONS ON THE THEME OF THE DISSERTATION

Kyriakopoulou, M. (2020). The role of parental involvement for students with Special Educational Needs: Parental influence and tradition. Second Scientific-Practical Conference "Education and the Arts: Traditions and perspectives. SU "St. Kliment Ohridski", ISSN 2738-8999 (online) pp.650-657,

<https://fnoi.uni-sofia.bg/wp>

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Kyriakopoulou, M. (2021). Reflection of COVID-19 on Special Education. Eighth International Conference "Pedagogical Education-Traditions and Modernity" held in VelikoTarnovo, ISBN 2534-9317, pp.150-155

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<https://fnoi.uni-sofia.bg/wp>

[content/uploads/2022/11/Sbornik_Obrazovanie_Izkustva_2022_web.pdf](https://fnoi.uni-sofia.bg/wp-content/uploads/2022/11/Sbornik_Obrazovanie_Izkustva_2022_web.pdf)

Kyriakopoulou, M. (2023). Holistic approach to the development of learning skills of students with Special Educational Needs. Fourth Scientific-Practical Conference "Education and the Arts: Traditions and perspectives. SU"St. Kliment Ohridski").