



## KNOWLEDGE AND ATTITUDES OF STUDENTS WITH AND WITHOUT DYSLEXIA ON ENVIRONMENT AND SUSTAINABILITY - A RESEARCH

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### Abstract:

Linking environmental education to the education of children with and without learning disabilities is also a challenge for education. The purpose of the present study was to explore student knowledge and attitudes in students with and without dyslexia, first and second gymnasium, in relation to environmental issues and sustainability. The research was conducted on an anonymous questionnaire, which was specifically created for the needs of this survey and included multiple-choice questions in relation to attitudes and knowledge of students in Environmental Education. The students who completed the questionnaire were 70, 35 of whom were non-dyslexic and 35 with dyslexia. The research was conducted in four Gymnasiums in the city of Rhodes. The findings show that students with and without learning difficulties have a differentiation, to the extent that the knowledge of students without dyslexia is more than that of students with dyslexia on Environment and Sustainability issues. In contrast, students' attitudes with dyslexia are more "friendly" to the environment and sustainability.

**Keywords:** special educational needs, dyslexia, environmental education, sustainability, attitudes

### 1. Introduction

In the 21st century the environmental problem, as well as the important role played by environmental education in addressing it holds a dominant position internationally in scientific and socio-educational events (Katsikis, 2003; Stevenson, 2007; Martins et al., 2006; Warburton, 2003). Therefore, as the literature shows Environmental Education and Health Education and Health Promotion, as innovative pedagogical proposals and

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interventions, contribute to the education of children with special educational needs (Bialeschki, 1981; Wilson, 1994; Ioannidi, 2006a, 2006b, 2007; Guskey, Jung, 2009). In particular, Environmental Education and Training for Sustainability shall aim (a) to raise awareness about the environment and environmental problems and to develop relevant knowledge and skills to address environmental issues, (b) to foster positive attitudes and behavior and to develop a sense of responsibility in relation to the environment, and (c) to implement action to resolve environmental problems (Flogaiti, 2006, p. 31).

## 2. Theoretical framework

It is common knowledge that in most schools today there are students facing a variety of learning problems, such as dyslexia, which affects their learning performance (Tzivinikou, 2015; Ioannidi & Samara, 2019a) and their social adaptation (Ioannidi & Samara, 2019b). Given that children in special education represent a significant proportion of school age, one of the contemporary challenges of special education and education is to improve the ability of children with disabilities, such as learning difficulties, in particular dyslexia, to successfully go from school to community and to cooperate - Special Education - more effectively with General Education, in order to serve students who, while not having formal diagnosis, more effectively, they don't go to school (Heward, 2009).

However, the inclusion of children with special learning needs must follow a number of educational and teaching principles which also constitute the pedagogy of inclusion. This does not mean, however, that a pedagogical approach specific to these students should be devised. This would promote a new separation, while what is needed for inclusion is the creation of "*situations of shared life and learning*" (Kaila, 1996), for all students.

Environmental education focuses on the relationship between man and his cultural and biophysical environment and since special education focuses on the provision of equal opportunities and opportunities for learning, as well as on the process of mitigating social inequalities, it is clear that these two educational dimensions converge in many common areas and between them there is a two-way relationship and direct interaction. Human relations with man and the cultural environment are at the heart of both special education and environmental education. At the same time, the acquisition of knowledge, attitudes and skills, which are distinguished from responsibility, assessment and respect for man and the environment, is the main objective of both (Dimakopoulou, 2009).

On this basis, linking environmental education to the education of children with and without learning problems is a pedagogical challenge, focusing on the students' own views on the teaching of environmental education (Johnson & Fensham, 1987). Over the past decades, the interest of the educational community, parents and those directly or indirectly involved in education has often been focused on the field of learning difficulties faced by children in school and on the phenomenon of school failure (Kaila,

1996), since in almost all schools and classrooms students are encountering difficulties in connection with school learning and organized school knowledge (Kavale & Forness, 2000).

### 3. Purpose

The purpose of this study was to explore students' knowledge and attitudes in students with and without dyslexia in first and second Grammar, in relation to environmental issues and sustainability (Gogaki & Ioannidi, 2019). It should be noted that students with dyslexia have been targeted by research due to the increase in the number of children recognized with learning difficulties in school learning (Polychronh, 2006) and given that dyslexia is the most common learning difficulty, since a proportion of all students with special educational needs in the order of 70-80% have difficulties in reading (Tzivinikou, 2015).

In the light of this research problem, and as the environmental problems facing mankind are increasing at a rapid pace every day, on the one hand, and in many schools in the country, several students are attending, with learning difficulties and particular dyslexia, the research idea is based on an attempt to identify and highlight possible differences (Bender, 1985) and/or similarities between knowledge and attitudes of students with and without dyslexia.

Environmental education is a "lifelong" education with a holistic approach to tackling complex and complex environmental problems. The impact of Environmental Education on young people -students in terms of knowledge, understanding, awareness-raising, changing attitudes and behavior in developing appropriate skills and in developing new decision-making-oriented values at all levels (individual and social), with a view to improving and protecting the environment, have been studied in depth since the mid-1960s to date (Papadimitriou, 1998; Kaila et al., 2005, p.11).

Education should be more concerned with contemporary environmental problems, which are experienced daily by citizens of all ages. This will be more effective if it is linked to children's personal experiences and is done to solve these problems, and not only to highlight their size, which creates pessimism rather than a willingness to act (Towler & Swan, 1972).

The main focus of researches, particularly on students, is on developing eco-education, building knowledge and attitudes that are environmentally friendly, developing skills with an emphasis on environmental issues/problems assessment, in conjunction with participatory action; which are the key areas for developing an Environmental Education program.

In the field of education, at the same time as the development and implementation of Environmental Education, there has been a rapid increase in the study and employment of the area of learning difficulties, particularly children with dyslexia. This is because, now, in almost every school and every class, there are children who have dyslexia. The strong concern with dyslexia is not accidental. It relates to the fact that a

small but significant proportion of children, without any obvious reason, cannot read, but also more generally to the importance of learning the written word and, in particular, reading in today's societies. Dyslexia can become part of learning difficulties. Learning difficulties are a complex and diverse field of research and action, but also a single area of contention concerning the rationale, definition, diagnosis, categorization and pedagogical treatment of learning difficulties (Panteliadou, 2000).

Today's school, however, often does not offer the same learning opportunities to children of formal and non-formal development. Here, it is worth noting that, although a more specific objective of Environmental Education is to acquire knowledge and attitudes of all students who contribute to attitudes which improve the conditions of communication, learning and action, if they are distinguished by responsibility, assessment and respect for human beings and the environment, joint study of the two fields has not been carried out to date (Georgopoulos, 2005).

Given that the coeducation of children with and without disabilities is a social and pedagogical issue and that dyslexia is not an obstacle to effective participation in social and environmental issues, such as involvement in environmental education, our research problem was based on the joint investigation of Environmental Education in children with and without dyslexia.

#### **4. Method**

The main purpose of the project is to explore students' knowledge and attitudes in students with and without dyslexia, in First and Second Grammar, in relation to environmental issues and sustainability. In more detail, an attempt is being made to broaden students' knowledge of environmental problems and their classmates' respective problems. At the same time, attitudes to the environmental problems of students with dyslexia of the sample and their classmates are compared. The research questions raised were:

- a) there is a difference in each individual question in the performance, in terms of environmental knowledge, between students with dyslexia and without dyslexia,
- b) there is a difference in each individual question in performance, in terms of environmental attitudes, between students with dyslexia and without dyslexia.

The survey was conducted by an anonymous questionnaire, which was specifically designed for the needs of this research and included multiple-choice questions regarding students' attitudes and knowledge in Environmental Education. The students who completed the questionnaire were 70,35 of whom were non-dyslexic and 35 with dyslexia. The research was conducted in four Gymnasiums in the city of Rhodes. In order to make the results of the survey as objective as possible, we have tried to ensure that the sample does not differ in gender and student class between the two groups.

The limitations of the survey are that it is of a topical nature and does not seek to generalize conclusions. However, given the complexity and diversity of educational environments, we found a descriptive research material useful from a "natural"

circumstance - these Gymnasiums - to further scientific and educational reflection (Cohen et al., 2007).

## 5. Results and Discussion

The findings show that students with and without learning difficulties are differentiated to the extent that the knowledge of students without dyslexia is more than that of students with a dyslexia about Environment and Sustainability.

In contrast, students' attitudes with dyslexia are more "friendly" to the Environment and Sustainability. Given the "learning diversity" of students with and without learning difficulties in light of the difficulty faced with established-conventional learning methods (Tzivinikou, 2015), innovative educational interventions, such as Education for the Environment and Sustainability, provide opportunities for Everyone to participate, promoting a democratic modern school.

In particular, through the responses received by children with dyslexia (85% of the sample) they participate more frequently in environmental education programs than students without dyslexia (40% of the sample).

However, students without dyslexia (80% of the sample) stated that they were more frequently informed about environmental issues than students with dyslexia (40% of the sample). Both groups of students stated that they prefer to be informed about environmental issues through internet use (100% of the sample of both groups).

According to the results, the percentages of the sample in terms of knowledge were higher, in students who do not have dyslexia (85% of the sample), as in large proportions they answered questions correctly, as opposed to students with dyslexia who answered with a smaller percentage correctly (50% of the sample).

In contrast to attitude questions, students with dyslexia (90% of the sample) answered correctly, as the responses they provided were more environmentally-friendly, as opposed to students without dyslexia (60% of the sample) who did not appear from their answers to be particularly environmentally sensitive. Both groups choose to contribute to the planet through recycling (100% of the sample of both groups).

According to the research results, it can be seen that the two groups differ between their knowledge and attitudes. In particular, students without dyslexia outweigh their knowledge of students with dyslexia, but students with dyslexia outweigh students without dyslexia in attitudes.

Nowadays, the model of education for all is adopted for students with dyslexia (special learning difficulties), according to which schools have to meet the needs of all their students, that is, co-education schools where everyone belongs, are accepted, supported and supported by their peers and other members of the school community. In practice, this means differentiation, which the curriculum should have, so that it is tailored to all students whose problems are solved within the standard system (Venieraki, 2008).

## 6. Conclusions

Environmental education, as is currently scientifically illustrated, is radically different from any education related to the environment that has been developed in the past and which continues to exist officially today. It differs in terms of objectives and objectives but, above all, in terms of its underlying philosophy, the considerations it develops and the needs which promote it, bearing in mind the burden of environmental problems. Its lasting nature and seriousness are recognized by the international scientific community (Smyth, 2006), and it is likewise accepted that its implementation requires a great deal of time and effort (Flogaiti, 1998/ Tilbury, 1995).

Also, the interest of the educational community and those directly or indirectly involved in education often focuses on the learning difficulties faced by children in school (Kaila, 1996), since these people find it difficult to benefit from the usual methods of education and do not attribute to the same extent as their peers to different skills, being a heterogeneous group of people, which is at different times the symptoms (Tzouriadou, Bitzarakis, 1996).

This work is limited in scope research, which aims at a comparative assessment of the level of environmental knowledge and attitudes of students with dyslexia and students without dyslexia at a local level.

We hope that it will help by recording the similarities and differences that will be identified in the further investigation with a view to understanding the differences between these two groups, children with learning and without learning difficulties in relation to environmental education. Surely comparing knowledge and attitudes of Gymnasium students with and without dyslexia in the Environment and Sustainability is one of the modern challenges of Special Education.

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