
ATTITUDES AND PERCEPTIONS OF SPECIAL EDUCATION TEACHERS TOWARDS ENVIRONMENTAL EDUCATION IN GREECE AND THE INFLUENCE OF GENDER

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Abstract: Environmental education offers various benefits to students, as it improves their environmental knowledge, attitudes, intentions and behavior. Within the context of special education students, environmental education can generate great opportunities for sensory experiences in nature and hands-on learning, resulting in a deeper connection between students with disabilities and the environment. Teachers play a significant role in helping students shape environmental awareness and participate in effective teaching and inclusive learning processes. Despite the importance of the above considerations, there are few studies examining teachers' environmental attitudes and behaviors, in the case of special education in Greece. What is more, the role of gender shaping special education teachers' environmental attitudes and behaviors is a theme that lacks investigation in literature. Under this problematic, the current study set as a goal to present the attitudes and perceptions of special education teachers towards environmental education in Greece and examined the influence of gender on their attitudes and perceptions. For the above purpose, two research questions were oriented. The first research question examined what the level of environmental attitudes and responsible behaviors of special education teachers in Greece is and the second one investigated if these attitudes and behaviors differ between the men and women. The examination of the current research work was based on quantitative method. The research process took place during February 2026 at four public school units in Athens and Thessaloniki. The research sample consisted of 50 special education teachers (90% women, 10% men). The research instrument was a closed type of questionnaire that involved two main tools, notably the Revised New Ecological Paradigm (NEP) Scale and the Teacher Environmental Literacy Assessment (TELA), of which only the section "Behavior" was used. A section of demographics was also included in the questionnaire. Descriptive statistics were used to analyze the quantitative survey data. Analysis was conducted on SPSS statistical program v.21. According to the results, special education teachers presented a relatively high level of environmental behavior overall. The results indicate that special education teachers exhibit developed environmental awareness and frequent adoption of sustainable practices, which is particularly important given their role in shaping students' environmental awareness. With reference to gender and environmental attitudes and behaviors, small differences were observed in the current study between men and women. The current research showed that gender differences are not significant. Overall, both genders show a similar level of ecological behavior. Future research should examine environmental attitudes and behaviors of special education teachers in a larger sample, while also other variables could also be investigated as about their role in shaping these environmental attitudes and behaviors, like teachers' educational and cultural backgrounds. Finally, it is important for teachers to integrate environmental education into their practices, to generate various beneficial outcomes for their students and help them learn in an inclusive learning environment that environmental education can guarantee. Training of teachers and skills' development is fundamental for this purpose.

Keywords: environmental education, special education teachers, attitudes, behavior, gender

1. INTRODUCTION

This study refers to the concept of environmental education in special education. More specifically, the objectives of the research are a) to present the attitudes and perceptions of special education teachers towards environmental education in Greece and b) to examine the influence of gender on their attitudes and perceptions. According to the literature, environmental education is beneficial for students, as it improves their environmental knowledge, attitudes, intentions and behavior (Van De Wetering, Leijten, Spitzer, & Thomaes, 2022). Within the framework of special education, literature highlights the importance of inclusive environmental education, tailored to meet the diverse needs of students, particularly those with disabilities (Roy, 2024). Environmental education generates opportunities for sensory experiences in nature and hands-on learning, resulting in a deeper connection between students with disabilities and the environment. By integrating sustainable practices, such as waste reduction, recycling and sustainable gardening, students are actively engaged with daily sustainable principles and develop a strong sense of responsibility towards environmental protection (Roy, 2024). Teachers play a significant role in modeling environmental behavior to their students, helping them shape environmental awareness and set long-term sustainability goals (Lamauskas & Makarskaitė-Petkevičienė, 2025; Tolppanen & Kärkkäinen, 2022). According to the research of Szczytko, Carrier and Stevenson (2018) that took place to United States of America, teachers who

frequently engage in outdoor environmental education can improve academic and emotional outcomes for many students, including students with emotional, cognitive, and behavioral disabilities. In the Greek context, Lappa Mantzikos and Paraskevopoulos (2019) investigated teachers' views on the impact of environmental education on students with disabilities or special educational needs and concluded that environmental education significantly helps students, since it contributes to the improvement of their cognitive, social and communication skills. The research also showed that teachers themselves recognize the importance of environmental education for them, since environmental education helps them discover the best forms of teaching. Literature also supports that teachers' perceptions of environmental education can be characterized as highly subjective, as they are affected by several factors including teachers' educational and cultural backgrounds, gender, participation in environmental activities etc. (Georgiou, Hadjichambis, & Hadjichambi, 2021). While most studies on environmental education at school context have focused on the benefits that environmental education generates for students (e.g. Ardoin, Bowers, Roth, & Holthuis, 2018), there are few studies examining teachers' environmental attitudes and behaviors, especially those teaching at special education units in Greece. What is more, the role of gender shaping special education teachers' environmental attitudes and behaviors is a theme that lacks investigation in literature. Under this problematic, the present work examines what is the level of environmental attitudes and responsible behaviors of special education teachers in Greece (1st research question), while it also investigates if these attitudes and behaviors differ between the men and women (2nd research question).

2. MATERIALS AND METHODS

This quantitative method research was conducted in order to study attitudes and perceptions of special education teachers towards environmental education in Greece as well as to investigate the influence of gender on their attitudes and perceptions. The research process took place during February 2026 at four public primary schools in Athens and Thessaloniki. The research sample consisted of 50 special education teachers (90% women, 10% men). Most had a postgraduate degree (54%), while the largest percentage worked in parallel support (40%) and inclusion classes (38%). In terms of experience, the largest percentage had 6–10 years of service (34%). As about data collection instruments, the questionnaire of this research involved two main tools, notably the Revised New Ecological Paradigm (NEP) Scale and the Teacher Environmental Literacy Assessment (TELA). The Revised NEP Scale was developed by Dunlap, Van Liere, Mertig and Jones (2000) to measure pro-environmental orientation by assessing beliefs on the human-nature relationship. The TELA Scale was developed by Hunter and Jordan (2019) and uses a contextual view of environmental literacy. TELA includes measures of Knowledge, Self-efficacy, Environmental Identity, Behavior, Issue Identification, and Strategy Selection. For the scope of this research, only the section "Behavior" was used. As for Revised NEP Scale, participants viewed 14 statements and rated their responses on a Likert scale from 1, indicating strong disagreement, to 5, indicating strong agreement. With reference to TELA Scale (Behavior), participants viewed 6 statements and rated their responses on a Likert scale from 1, indicating never, to 5, indicating always. A section of demographics was also included in the questionnaire (gender, specialization in Special Education, employment framework, years of service). Additionally, an information note was given at the beginning of the questionnaire form, informing participants about the research scope and the research process. Responses were completely anonymous and were used exclusively for the present academic purpose. Participation was voluntary. Finally, as for data analysis, descriptive statistics were used to analyze the quantitative survey data (frequencies, percentages, means, standard deviations). Analysis was conducted on SPSS statistical program v.21.

3. RESULTS

The sample consisted of 50 special education teachers, the majority of whom were women (90%). Most had a postgraduate degree (54%), while the largest percentage worked in parallel support (40%) and inclusion departments (38%). In terms of experience, the largest percentage had 6–10 years of service (34%) (table 1).

Table 1: Sample demographics
(N=50 special education teachers)

	n	%
Gender		
Male	5	10 %
Female	45	90 %
Specialization in Special Education		
University degree	15	30 %
Master	27	54 %
400-hour seminar	8	16 %
Employment framework		
School for Deaf/Blind	4	8 %
Inclusion Class	19	38 %
Parallel Support	20	40 %
Special Primary School/ Kindergarten	7	14 %
Years of service		
0–5 years	13	26 %
6–10 years	17	34 %
11–15 years	10	20 %
>15 years	10	20 %

Source: Author's research

As about the level of environmental attitudes and responsible behaviors by special education teachers (1st research question), TELA Scale was used to investigate the frequency of adoption of environmentally responsible behaviors by special education teachers (table 2). The results showed that the participants presented a relatively high level of environmental behavior overall, as the total score of the scale was high ($M = 3.81$, $SD = 0.64$). At the level of individual behaviors, the highest mean value was recorded in recycling materials ($M = 4.02$), which seems to be an established and frequently adopted practice. Correspondingly high values appeared in information on environmental issues through articles and documentaries ($M = 3.96$) as well as in participation in environmental actions ($M = 3.92$), showing interest and active involvement of teachers. Overall, the results indicate that special education teachers exhibit developed environmental awareness and frequent adoption of sustainable practices, which is particularly important given their role in shaping students' environmental awareness.

Table 2: Descriptive statistics of Teacher Environmental Literacy Assessment (TELA) Scale
(M=mean, SD=standard deviation)

	M	SD
I recycle paper, plastic and metals at home or school	4.02	0.89
I participate in clean-ups of natural areas	3.84	0.93
I choose to buy products with less packaging	3.52	0.93
I try to convince others to change their behavior	3.62	1.03
I participate in environmental organizations	3.92	0.83
I read articles or watch documentaries about environmental issues	3.96	0.88
Total TELA score	3.81	0,64

Source: Author's research

The Revised NEP scale assessed teachers' environmental attitudes (table 3). The responses indicate that the sample has a moderate to high attitude in favor of environmental protection ($M = 3.69$). Particularly high values appeared in the statement that humans are subject to the laws of nature ($M = 3.90$) and in the recognition of environmental abuse ($M = 3.84$), indicating strong environmental awareness. At the same time, the average values in anthropocentric statements indicate that a part of the teachers still maintain trust in technology and human control of nature.

Table 3: Descriptive statistics of Revised NEP Scale
(*M=mean, SD=standard deviation*)

	M	SD
We are approaching the maximum number of people the earth can support	3.78	0.93
Humans have the right to modify the environment	3.74	1.03
Human intervention is causing catastrophic consequences	3.70	0.84
Human ingenuity will prevent the destruction of the earth	3.80	0.90
Humans are abusing the environment	3.84	1.04
The earth has abundant resources	3.52	1.07
Plants and animals have an equal right to exist	3.62	0.92
Nature is strong enough to withstand the impacts	4.00	0.93
Humans are subject to the laws of nature	3.90	0.86
The earth has limited resources	3.80	0.88
Humans are destined to dominate nature	3.82	0.98
The balance of nature is fragile	3.80	0.93
Humans will control nature	3.56	1.07
A major environmental disaster is coming	3.54	0.97
Total NEP score	3.69	0.58

Source: Author's research

With reference to gender and environmental attitudes and behaviors (research question 2), small differences were observed between men and women in individual environmental behaviors. Men showed slightly higher mean values in actions such as recycling, participating in clean-up activities and raising awareness about environmental issues, while women showed greater homogeneity in their responses and higher mean values in trying to influence others and in consumer behavior (packaging). The total score of the TELA scale showed a relatively high level of environmental attitudes in the sample. Men showed a slightly higher mean ($M = 4.00$, $SD = 0.20$) compared to women ($M = 3.79$, $SD = 0.37$) (table 4).

Table 4: Descriptive statistics of TELA by gender
(*M=mean, SD=standard deviation*)

	male M (SD)	female M (SD)
I recycle paper, plastic and metals at home or school	4.60 (0.55)	3.96 (0.90)
I participate in clean-ups of natural areas	4.60 (0.55)	3.76 (0.93)
I choose to buy products with less packaging	3.40 (0.55)	3.53 (0.97)
I try to convince others to change their behavior	3.20 (0.84)	3.67 (1.04)
I participate in environmental organizations	—	3.91 (0.87)
I read articles or watch documentaries about environmental issues	4.20 (1.30)	3.93 (0.84)
Total TELA score	4.00 (0.20)	3.79 (0.37)

Source: Author's research

The results show that the participants have a generally positive attitude towards the environment. Most agree that the planet has limited resources, that humans often damage the environment, that there is a risk of serious environmental destruction, and that nature is fragile and cannot withstand unlimited human intervention. It is observed that men in this sample have a slightly higher total score ($M = 3.94$, $SD = 0.22$) compared to women ($M = 3.72$, $SD = 0.23$), but the difference does not seem large (table 5). Overall, both genders show a similar level of ecological behavior.

Table 1: Descriptive statistics of Revised NEP by gender
(*M=mean, SD=standard deviation*)

	male M (SD)	female M (SD)
We are approaching the maximum number of people the earth can support	3.80 (0.45)	3.78 (0.97)
Humans have the right to modify the environment	4.20 (0.84)	3.69 (1.04)
Human intervention is causing catastrophic consequences	3.60 (0.89)	3.71 (0.84)
Human ingenuity will prevent the destruction of the earth	4.00 (0.71)	3.78 (0.93)

Humans are abusing the environment	3.80 (0.84)	3.84 (1.07)
The earth has abundant resources	4.20 (0.45)	3.44 (1.10)
Plants and animals have an equal right to exist	3.40 (1.14)	3.64 (0.91)
Nature is strong enough to withstand the impacts	4.40 (0.89)	3.96 (0.93)
Humans are subject to the laws of nature	3.40 (0.55)	3.96 (0.88)
The earth has limited resources	4.00 (1.00)	3.78 (0.88)
Humans are destined to dominate nature	4.40 (0.89)	3.76 (0.98)
The balance of nature is fragile	4.20 (0.84)	3.76 (0.93)
Humans will control nature	4.20 (0.45)	3.49 (1.10)
A major environmental disaster is coming	3.60 (0.55)	3.53 (1.01)
Total NEP score	3.94 (0.22)	3.72 (0.23)

Source: Author's research

4. DISCUSSIONS

According to the results from the current study, special education teachers presented a relatively high level of environmental behavior overall. The results indicate that special education teachers exhibit developed environmental awareness and frequent adoption of sustainable practices, which is particularly important given their role in shaping students' environmental awareness. The above findings are in accordance to literature, where researchers argue that by integrating sustainable practices in school, such as recycling, students are actively engaged with daily sustainable principles and develop a strong sense of responsibility towards environmental protection (Roy, 2024), they shape environmental awareness (Lamanauskas & Makarskaitė-Petkevičienė, 2025; Tolppanen & Kärkkäinen, 2022) and improve their outcomes and skills (Lappa et al., 2019; Szczytko et al., 2018). With reference to gender and environmental attitudes and behaviors, small differences were observed in the current study between men and women. The current research showed that gender differences are not significant. Overall, both genders show a similar level of ecological behavior. On the contrary, Georgiou et al (2021) support that gender influences teachers' perceptions of environmental education.

5. CONCLUSIONS

This study showed that special education teachers have a generally positive attitude towards the environment. The level of environmental attitudes and responsible behaviors of special education teachers in Greece is high. With reference to gender and environmental attitudes and behaviors, both men and women show a similar level of ecological behavior. Future research should examine environmental attitudes and behaviors of special education teachers in a larger sample, while also other variables could be investigated as about their role in shaping these environmental attitudes and behaviors, like teachers' age, years of service, academic and cultural backgrounds. Finally, it is important for teachers to integrate environmental education into their practices, to generate various beneficial outcomes for their students and help them learn in an inclusive learning environment that environmental education can guarantee. Training of teachers and skills' development is fundamental for this purpose.

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