



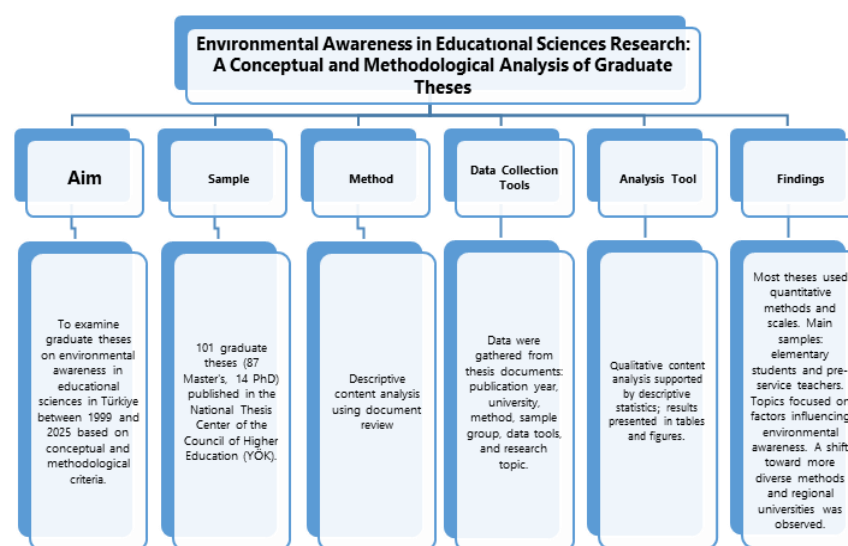
Environmental Awareness in Educational Sciences Research: A Conceptual and Methodological Analysis of Graduate Theses

Graphical Abstract

Ph.D. Student Efe BULUT
Kastamonu University
efe_talat@hotmail.com
0000-0002-9441-126X

Bilgin Ünal İBRET
Kastamonu University
bibret@kastamonu.edu.tr
0000-0001-9105-7595

Adem YILMAZ
Kastamonu University
yilmazadem@kastamonu.edu.tr
0000-0002-1424-8934



Abstract

The rapid depletion of global resources has made people more sensitive to environmental issues. Students, who will be the decision-makers of the future, are being provided with basic information on environmental protection, particularly in family and school settings, and it is expected that this information will be put into practice. In this regard, fostering environmental awareness among students can be achieved by ensuring they have the necessary knowledge on the subject. Numerous studies have been conducted on this important topic in educational sciences. Being informed about the status of these studies will contribute to researchers in terms of the relevant basic literature. In this regard, the aim of this study is to systematically review master's theses on environmental awareness in the field of educational sciences in Türkiye between 1999 and 2025 within the framework of specific criteria. A qualitative research approach was adopted in the study, and theses published in the National Thesis Center of the Council of Higher Education were evaluated using the document analysis method. During the review process, the theses were analyzed in terms of the year of publication, university, research method, sampling type, data collection tool, and distribution of study topics. The data obtained shows that quantitative methods are preferred in the majority of theses on environmental awareness and that ready-made scales are generally used

Received : 29.10.2025

Revised : 14.11.2025

Accepted : 15.11.2025

*Social Scientific Centered Issues
Journal*,
2025, 7(2), 166-187
Doi: 10.71249/ssci.1812867

as data collection tools. When examining the sample groups, it is seen that teacher candidates, teachers, and primary school students are predominantly the subjects of the studies. In theses related to environmental awareness, variables such as the effect of environmental factors on the development of environmental awareness, attitudes towards the environment, awareness, and behavioral change have been found to be prominent. These findings show that academic studies on environmental awareness in Türkiye are increasingly becoming interdisciplinary and that environmental education is beginning to be addressed as a holistic value education field in the educational sciences literature. It reveals that postgraduate studies on environmental awareness have increased, especially in recent years, and that the themes of environmental education, sustainability, and ecological awareness have become increasingly important during this period.

Key words: Environmental awareness, educational sciences, graduate theses.

Introduction

Consciousness, meaning *"the ability to know oneself and one's surroundings"* (Turkish Language Association [TDK], 2021), is an expression of humanity's orientation from its inner world to the external world. This orientation, as a natural extension of the quest for the meaning of existence, also involves questioning the bond which humankind has established with nature, developing a sense of responsibility towards the environment, and transforming this awareness into a way of life. "Environment," in its simplest definition, is the natural, social, economic, and cultural setting in which humans and other living beings live and interact with each other. This concept refers to the entirety of the natural environment, which consists of nature's own cycles, and the built environment, which has been shaped by human hands (Ministry of Environment and Urbanization [MEU], 2020; Keleş, 2013: 24). Environmental awareness can be defined as the ability to perceive and comprehend the threats and transformations of the world in which humans live and the opportunities available to them in the face of these transformations (Takala, 1991).

Environmental awareness is a mature form of human attention directed toward nature; it encompasses the ability to grasp the seriousness of environmental issues, to develop new solutions by reflecting on these issues, and to transform one's attitudes in favor of nature (Durgeç & Demirel, 2023: 502). Environmental awareness is more than superficial awareness; it is a way of questioning one's position in relation to existence. Understanding nature and living in harmony with it is a reflection of the questions humans ask about their own existence; for every attitude displayed towards nature reveals the individual's moral maturity and intellectual

depth. An individual's environmental awareness is a combination of his awareness of nature, his perception, his way of relating to it, and their knowledge, as well as his value judgments, moral standards, thought tendencies, attitudes and behaviors (Atasoy, 2005). In a broader sense, environmental awareness is a state of mind in which a person intuitively comprehends what is right and necessary in relation to nature (Handayani & Widodo, 2024). Here, establishing an ethical and emotional bond with nature takes precedence over the obligation to protect it. When humans reach this level of awareness, the desire for dominance over nature is replaced by mutual harmony and respect. As a result, environmental awareness transforms into an inner enlightenment where knowledge intersects with intuition and reason with conscience.

Environmental awareness can be defined as an individual's perception of problems occurring in his environment, his efforts to solve these problems, and his attainment of intellectual maturity through recognizing his responsibility towards nature (Cansaran, 2014). This level of awareness goes beyond intellectual awareness and guides the individual's relationship with the environment; thus, an internal understanding evolves into a moral attitude which is reflected on action. Environmentally beneficial behaviors can be defined as a set of conscious and responsible actions aimed at protecting the environment. These behaviors are closely related to the individual's concerns about environmental issues, value judgments, and attitudes toward seeking solutions. Environmental awareness, on the other hand, is a lifelong process which underlies these attitudes and behaviors. It matures within the individual's interaction with his environment and takes shape alongside his personality development (Erten, 2012; Türküm, 1998).

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judgments, moral standards, thought tendencies, attitudes, and behaviors (Atasoy, 2005). In a broader sense, environmental awareness is a state of mind in which humans intuitively grasp what is right and necessary in relation to nature (Handayani & Widodo, 2024). Here, establishing an ethical and emotional connection with nature takes precedence over the obligation to protect it. When humans reach this level of awareness, the desire for dominance over nature is replaced by mutual harmony and respect. As a result, environmental awareness transforms into an inner enlightenment where knowledge meets intuition and reason meets conscience. Environmental awareness can be defined as an individual's perception of problems occurring in his environment, his efforts to solve these problems, and his attainment of intellectual maturity through recognizing his responsibility towards nature (Cansaran, 2014).

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In the work titled "Environmental Science: A Sustainable World," environmental science is defined as "a comprehensive field which examines the interaction of humans with other living beings and the inanimate environment; it is related to many scientific disciplines such as physics, chemistry, biology, economics, geography, demography, politics, and ethics". Environmental awareness is classified into four distinct levels: "level of awareness—pollution and environmental degradation, level of awareness—overconsumption and overpopulation, level of awareness—spaceship Earth, and finally, level of awareness—sustainable world." The first three levels represent a human-centered perspective, while the fourth level represents a life-centered perspective (Miller, 2000). The first level, corresponding to pollution and environmental degradation, is regarded as one of the basic indicators of energy consumption, economic development, and growth in developed or developing countries (Uçan et al., 2014).

The misuse or excessive use of natural resources by humans leads to environmental pollution and the disruption of ecological balance (Turkish Academy of Sciences [TUBA], 2002). The depletion or unavailability of renewable resources over time is one of the most concrete indicators of environmental degradation (Miller, 2000). The second level of awareness (Overconsumption and Overpopulation) shows that energy demand has increased significantly alongside the rapid growth of the world population. This situation is rapidly increasing the use of non-renewable energy sources, creating serious pressures on the natural balance (Demir et al., 2023). Increasing urbanization, especially in high-income countries, further increases energy consumption, leading to a disruption in the balance between production and consumption, and consequently causing lasting negative effects on the environment (Yağlıkara, 2022).

Third level of consciousness (Spaceship Earth): Individuals at this level of consciousness view the world as a "spaceship" managed by advanced technology (Miller, 2000). In this sense, technology is regarded as a means of controlling problems such as population growth, environmental pollution, and resource consumption. The idea that human intelligence can make life sustainable by transforming nature forms the basis of this approach.

The fourth level of consciousness, namely the sustainable world view, emphasizes that respect for one's own existence is fundamentally integrated with respect for the world (Miller, 2000). At this level, individuals embrace the idea that nature must be protected without regard for self-interest and that life can only be sustained in harmony with nature. Similarly, TUBA (2002) states that individuals at this stage of awareness must take responsibility both for themselves and for others. Miller's (2000) approach points to the transformation of the relationship between humans and nature from a self-serving understanding to a consciousness based on moral responsibility. According to this, environmental awareness is the reinterpretation of human existence as an integral part of nature.

The modernization of the world and the rapid urbanization that accompanied it in the 1970s led to a global increase in environmental problems, making it necessary to systematically address environmental education. To this end, UNESCO launched the International Environmental Education Program (IEEP) in 1975 to raise environmental awareness and organized various regional meetings. The most important outcome of these efforts was the Intergovernmental Conference on Environmental Education, held in Tbilisi in 1977 in collaboration with UNESCO and UNEP (UNESCO, 1977). The Tbilisi Declaration defined the

objectives and pedagogical principles of environmental education, giving the field a universal direction. The Tbilisi Conference Declaration marked a turning point in the development of this field by defining the structural and pedagogical foundations of environmental education. The Declaration emphasized that environmental education is a comprehensive process aimed at transforming individuals' values, behaviors, and understanding of life. Today, most environmental education programs are shaped by the five fundamental goals defined by UNESCO: "awareness," which is to raise awareness and sensitivity towards the environment; "knowledge," which is to provide basic information and experience about the environment; "attitude," which is to develop positive values towards protecting the environment; "skills," which means providing the ability to identify and solve environmental problems; and "participation," which means effectively involving individuals in decision-making and solution processes related to the environment (Hungerford et al., 1980).

In the current era, the fact that environmental issues have spread to every corner of the earth has further increased the importance of environmental education. Environmental education is an important field of education which aims at making people aware of their responsibilities towards nature, develop a conscious attitude towards their environment, and learn ways to live without harming nature (Tilbury, 1995). For this reason, within the framework of the fundamental goals of national education and the specific objectives of social studies courses in our country, efforts are being made to raise individuals who are sensitive to issues concerning their country and the world, who understand the interaction between humans and the environment by recognizing the general geographical features of the world and their own environment, who have developed spatial perception skills, who have gained an individual or social perspective for the future, and who have embraced fundamental human values (İbret et al., 2019). In this respect, schools are among the fundamental institutions for establishing environmental awareness; teachers are seen as the most important representatives of this duty (Plevyak et al., 2001; Karatekin & Aksoy, 2012; Ünal et al., 2001). Therefore, the success of environmental education is closely linked to teachers' level of awareness regarding nature and the importance they attach to environmental values.

Environmental education is fundamentally based on the awareness of protecting nature and natural resources (Ünal et al., 2001). As a field of education which considers ecological balance, environmental education is a conceptual ground which questions the meaning of the

relationship between humans and nature. Environmental education is a consciousness and responsibility education which enables humans to rediscover their existential bond with nature and aims at transforming respect for nature into a moral attitude and philosophy of life (Bulut & Şimşek, 2022). This education is based on the idea of respect for the right to live of all living beings; because humans are beings which gain meaning within the continuity of nature. Therefore, environmental education brings together knowledge and conscience, thought and action. The goal is for individuals to develop a deep sensitivity which can transform knowledge about the environment into life. Thus, environmental awareness enables individuals to see protecting nature as a natural part of their existence rather than an obligation. A fundamental condition for achieving environmental awareness is a profound change in individuals' attitudes and behaviors towards the environment. This transformation is only possible through effective and enlightening environmental education (Yıldız, et al., 2000).

Environmental education, which enables individuals to perceive nature as a whole that must be protected, transforms them into thoughtful, sensitive, and responsible beings. As a result of this education, individuals who develop environmental awareness can understand the root causes of environmental problems more deeply; by grasping the necessity of an eco-centric perspective for the sustainability of life, they can take an active role in protecting the environment (Karataş, 2016). An educational process based on this perspective will enable individuals to see nature as the source of life and the foundation of its continuity, and over time, sensitivity towards the environment will evolve from a temporary reaction into a way of life. The topic of environmental awareness in education is noteworthy in terms of interdisciplinary thinking, developing critical awareness, and comprehensively understanding the relationship between individuals and nature. Although there are numerous studies in the literature on environmental awareness and environmental education, there is limited comprehensive evaluation of how this topic is addressed at the graduate level. This research aims at revealing the theoretical and methodological trends in the field by systematically examining graduate theses focused on environmental awareness in the field of educational sciences.

Environmental awareness is a fundamental field of research which shapes an individual's attitude, values, and sense of responsibility towards nature. Therefore, examining thesis studies will contribute to the existing environmental education literature and serve as a guide for future

academic research. This study is one of the first comprehensive initiatives in the field to systematically analyze postgraduate theses on environmental awareness in Türkiye. In this regard, the sub-objectives of the research are as follows:

1. What is the distribution of postgraduate studies on environmental awareness in the field of educational sciences by year?
2. What is the distribution of postgraduate studies on environmental awareness in the field of educational sciences by university?
3. What is the distribution of studies on environmental awareness in the field of educational sciences by method?
4. What is the distribution of studies on environmental awareness in the field of educational sciences according to the study group?
5. What is the distribution of studies on environmental awareness in the field of educational sciences according to data collection tools?
6. What is the distribution of studies on environmental awareness in the field of educational sciences according to research topics?

Methods

In this study, descriptive content analysis was adopted to examine the trends in postgraduate theses addressing environmental awareness in the field of educational sciences in Türkiye between 1999 and 2025. Content analysis was approached as an interpretive method aimed at understanding the underlying patterns of thought, conceptual trends, and developmental trajectory of the research field (Yıldırım & Şimşek, 2006). Through this method, it was revealed on what epistemological ground the academic production related to environmental awareness was shaped, within which conceptual frameworks it was grounded, and which gaps persisted in the field. Content analysis, which describes the data, was evaluated as a form of methodological inquiry that provides a critical view of the process of knowledge formation. This study primarily adopts the document analysis method and aims to systematically analyze existing theses. In the examined graduate theses, data related to the theme of environmental awareness within the scope of educational sciences were collected, classified, and interpreted in meaningful wholes according to the defined criteria. This approach aims at revealing how

environmental awareness is positioned in educational processes, what values it is associated with, and what conceptual foundations it is based on. The descriptive content analysis method was adopted as an interpretive research approach that would reveal the layers of meaning, intellectual orientations, and pedagogical transformation potential of environmental awareness within educational discourse. The study also aimed at revealing the sensitivity and ethical awareness behind academic productions related to environmental awareness.

Findings

In this section of the study, findings obtained from postgraduate theses in the field of education within the framework of environmental awareness are presented with relevant tables and graphs in line with the defined sub-objectives and interpreted with an analytical approach.

1. Findings Regarding the Distribution of Theses by Year

The table below shows the distribution of postgraduate theses on environmental awareness in education by year; this distribution sheds light on the course of academic interest in the field over time (Table 1).

Table 1. Distribution of postgraduate theses on environmental awareness in education by year

Publication Year	Master's	PhD	Total
1999	1	–	1
2003	1	–	1
2004	2	–	2
2006	3	–	3
2008	1	–	1
2009	2	1	3
2010	7	1	8
2011	5	–	5
2012	3	–	3
2013	3	2	5
2014	1	–	1
2015	3	2	5
2016	3	–	3
2017	3	1	4
2018	6	–	6
2019	8	1	9
2020	4	1	5
2021	3	–	3
2022	7	1	8
2023	6	2	8
2024	7	1	8
2025	8	1	9
Total	87	14	101

Data in Table 1 reveal a steady increase in postgraduate theses on environmental awareness between 1999 and 2025. The 101 studies identified during this period indicate that the subject is gaining increasing attention in the academic world. Eighty-seven of the theses are at the master's level, and 14 are at the doctoral level. It is noteworthy that the number of studies, which was quite limited in the early 2000s, has increased significantly since the 2010s.

This increase is mainly due to the recognition of the importance of environmental education in wider circles as environmental issues have taken on a global dimension. The main reasons for this momentum are the incorporation of sustainable development into education policies and the systematic inclusion of environmental awareness in teacher training programs. Indeed, 2019 stands out as the most productive period with 9 theses, indicating that environmental awareness is increasingly linked to interdisciplinary themes such as values education, civic awareness, and sustainable living.

Regarding this topic, a relative balance has been achieved in the number of theses completed after 2020, with the annual average number of theses remaining stable between 6 and 8. The limited number of doctoral-level theses indicates that the subject is approached more from an application-oriented, teaching-based perspective. However, the diversification of research conducted at the master's level shows that environmental education has entered a period of maturity in terms of academic accumulation (Figure 1).

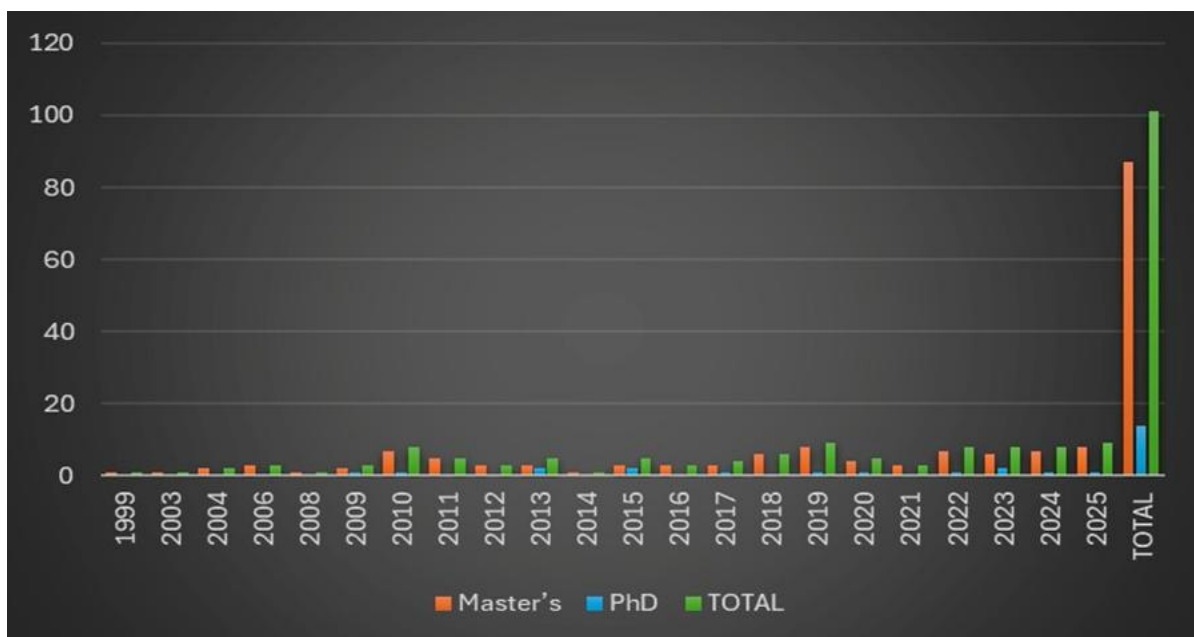


Figure 1. Distribution of postgraduate theses on environmental awareness in Türkiye by year (1999-2025)

The findings reveal that environmental awareness has followed a steady upward trend in the field of education sciences in Türkiye, and that environmental awareness has now become one of the primary focuses of scientific research. This positions environmental education as one of the most important areas of knowledge and values shaping the people of the future.

2. Findings Regarding the Distribution of Theses by University

The table below presents data on which universities produced graduate theses addressing environmental awareness in education. This distribution is significant in that it demonstrates the academic contribution of the relevant universities to environmental awareness research and the concentration in this field.

Table 2. Distribution of master's theses on environmental awareness in education by university

University	Master's	Ph.D	Total
Adnan Menderes University	1	-	1
Afyon Kocatepe University	1	-	1
Aksaray University	3	-	3
Amasya University	1	-	1
Anadolu University	5	-	5
Ankara University	1	1	2
Atatürk University	1	-	1
Balıkesir University	3	-	3
Bartın University	3	-	3
Bursa Uludağ University	1	-	1
Celal Bayar University	1	-	1
Cumhuriyet University	1	-	1
Çanakkale Onsekiz Mart University	2	-	2
Çukurova University	-	1	1
Dicle University	1	-	1
Dokuz Eylül University	1	-	1
Dumlupınar University	1	-	1
Ege University	1	-	1
Erzincan Binali Yıldırım University	1	-	1
Fırat University	4	-	4
Gazi University	11	3	14
Gaziosmanpaşa University	1	-	1
Giresun University	1	-	1
Hacettepe University	5	7	12
Hatay Mustafa Kemal University	2	-	2
İhsan Doğramacı Bilkent University	1	-	1

Istanbul University	2	-	2
Istanbul Aydın University	1	-	1
Kahramanmaraş Sütçü İmam University	3	-	3
Karadeniz Technical University	1	-	1
Kastamonu University	2	-	2
Kocaeli University	2	-	2
Maltepe University	1	-	1
Marmara University	6	-	6
Mehmet Akif Ersoy University	1	-	1
Mersin University	1	1	2
Necmettin Erbakan University	2	-	2
Niğde Ömer Halisdemir University	3	-	3
Pamukkale University	1	-	1
Sakarya University	1	-	1
Selçuk University	1	-	1
Siirt University	1	-	1
Trabzon University	-	1	1
Van Yüzüncü Yıl University	2	-	2
Yıldız Technical University	2	-	2
Total	87	14	101

As Table 2 shows, Ankara and metropolitan universities have a significant weight in the production of postgraduate theses on environmental awareness in education. In particular, Gazi University (11 master's degrees, 3 doctorates) and Hacettepe University (5 master's degrees, 7 doctorates) are in a leading position in the field of environmental education. The strong academic tradition and research infrastructure of these two institutions have made them the focal point of intensive production in environmental awareness studies. These two universities account for approximately a quarter of all theses, clearly demonstrating a capital-centered concentration in environmental awareness research. On the other hand, established institutions in Western Anatolia, such as Marmara University (6 master's degrees), Anadolu University (5 master's degrees), and Ege University (1 master's degree), have also made significant contributions to the field.

This distribution indicates that environmental awareness research is not limited to central universities but is expanding into different geographical regions of the country, signaling academic mobility. The increase observed in regional institutions such as Bartın, Balıkesir, Aksaray, and Kahramanmaraş Sütçü İmam Universities indicates that environmental issues are

beginning to be embraced at the local level and that this awareness is reflected in academic work.

The limited number of doctoral dissertations on Environmental Awareness (14 studies) suggests that research on environmental awareness has not yet reached maturity, but is gaining momentum in terms of theoretical depth. Indeed, doctoral-level productions at Hacettepe, Gazi, Ankara, Çukurova, Mersin, and Trabzon universities demonstrate the existence of a more conceptual approach developing around environmental philosophy and sustainability principles.

Overall, the picture reveals that environmental awareness research in Türkiye has followed a development path spreading from the center to the periphery. Initially limited to a few major universities, the studies have gradually spread to younger universities in Anatolia, thereby gaining regional diversity and academic continuity in the field of environmental education. This trajectory clearly demonstrates that environmental awareness has become an established, a sustainable, and an increasingly institutionalized field of research in Turkish academia.

3. Findings Regarding the Distribution of Theses According to Research Methods

Table 3 shows the research methods used in theses prepared on environmental awareness in Türkiye (Table 3). This table reveals the preferred methodological approaches in research related to environmental awareness and the methodological trends in the field.

Table 3. Distribution of master's theses on environmental awareness in education according to research methods

Method	Master's	Ph.D.	Total
Qualitative	16	-	16
Quantitative	57	4	61
Mixed	14	10	24
Total	87	14	101

Table 3 shows that the "quantitative research tradition" has a clear advantage in the methodological orientation of postgraduate theses on environmental awareness. Regarding the subject, out of a total of 101 theses examined covering the period between 1999 and 2025, 61 were quantitative, 24 were mixed, and 16 were qualitative. As can be seen from this table, a measurable and numerical data-based understanding has long been dominant in

environmental awareness studies, while qualitative research based on interpretive and in-depth analysis has been less preferred. The intense quantitative orientation seen in master's theses shows that researchers approached environmental awareness more through variables such as attitude, awareness, knowledge level and behavior.

The majority of the studies conducted during this period were based on statistical methods such as surveys, scale development, and descriptive survey; therefore, environmental education is seen as a field with high numerical verifiability. Doctoral theses, on the other hand, show a diversification of topics and methods, adopting an approach that benefits from the objectivity of numerical criteria and the depth of qualitative data. This trend indicates that environmental awareness is beginning to be addressed in a multi-layered manner, related to the world of values, attitudes, and meaning.

When Table 3 is examined as a whole, it is observed that a methodological transformation is taking place in environmental awareness studies. The quantitative trend that dominated in the early years has given way in recent years to a more flexible and in-depth research approach that combines mixed and qualitative designs (Figure 2). This change indicates that environmental education has become a field of science that also focuses on the meaningful, ethical, and emotional relationship that humans establish with nature.

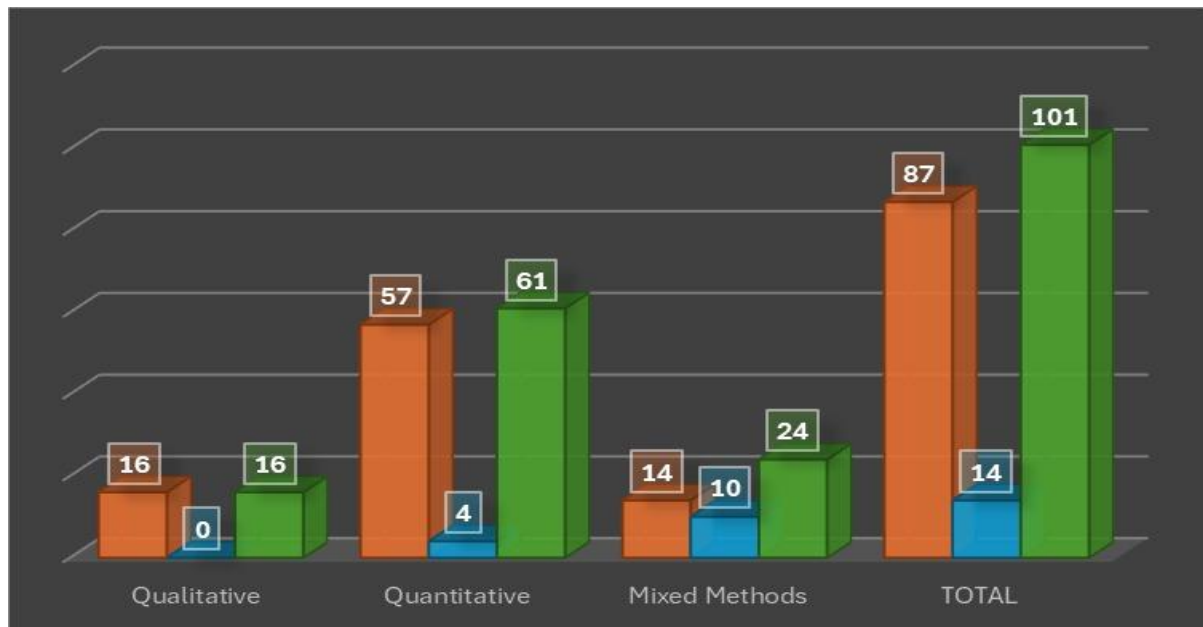


Figure 2. Distribution of postgraduate theses on environmental awareness in Türkiye according to research methods

4. Findings Regarding the Distribution of Theses According to Sample Groups

The distribution of graduate theses evaluated within the scope of a review of graduate studies on environmental awareness in education according to sample groups is shown in Table 4 (Table 4). This distribution is important in terms of showing which participant profiles are focused on in research related to environmental awareness and at what level the research universes are structured.

Table 4. Distribution of postgraduate theses on environmental awareness in education according to sample groups

Data Collection Groups	Master's	Ph.D.	Total
Teachers	13	-	13
Pre-service Teachers (Higher Education)	17	6	23
Preschool Students	3	-	3
Primary School Students	35	7	42
Secondary School Students	9	-	9
Teacher-Student	2	-	2
Student-Parent	1	-	1
School Administrator-Student-Teacher-Parent	1	-	1
Teacher-Administrator	1	-	1
Preschool-Primary School	1	-	1
Primary-Secondary School	-	1	1
Primary-Secondary-Higher Education	1	-	1
Adults (Volunteers)	1	-	1
Documents (Books-Curricula, etc.)	2	-	2
Total	87	14	101

A careful examination of the data in Table 4 reveal that postgraduate studies on environmental awareness have largely focused on primary school students and teacher candidates. A significant portion of the 87 master's and 14 doctoral theses prepared between 1999 and 2025 were conducted directly in educational settings and focused on the development of environmental awareness at the student level. The numerical superiority of studies conducted at the primary education level (35 master's, 7 doctoral) indicates that environmental awareness is considered a fundamental value that should be instilled in the early stages of education.

This may also be consistent with the educational understanding that childhood is the most critical period for shaping sensitivity and habits towards the environment. Researchers' focus on this age group stems from their desire to observe the impact of environmental education on creating lasting behavioral changes.

Theses prepared on this subject show that research on teacher candidates accounts for a significant proportion (17 master's degrees, 6 doctorates). This indicates that the idea that environmental awareness should be included in teacher training processes has been accepted in academic circles. Studies on teachers indicate that the ways in which environmental awareness is reflected in classroom practices and teacher behavior are considered important. In contrast, the lack of research on other stakeholders, such as school administrators, parents, and adult individuals, suggests that environmental awareness is approached primarily from a school-centered perspective.

The limited number of studies targeting environmental awareness and participation at the societal level can be considered one of the areas open to development in this field. The scarcity of document-based studies (2 theses) also indicates that environmental awareness is not systematically addressed through teaching programs, textbooks, and policy documents. However, such studies have the potential to clarify the relationship between the theoretical foundations of environmental education and its practical application.

In general, theses on environmental awareness have been shaped around a school and teaching-centered axis, while theses prepared in recent years show a trend towards a broader social awareness by including different participant groups. This trend indicates that environmental awareness is beginning to establish itself as a common social responsibility and cultural value area.

5. Findings Regarding the Distribution of Theses According to Data Collection Tools

Findings regarding the distribution of graduate theses evaluated within the scope of a review of graduate studies on environmental awareness in education according to data collection tools are presented in Table 5. This distribution is important in that it reveals which data collection techniques are preferred in postgraduate research related to environmental awareness, demonstrating the methodological depth and diversity of applications in the field.

Table 5. Distribution of postgraduate theses on environmental awareness in education according to data collection tools

Data Collection Tools	Master's	Ph.D.	Total
Scale	51	4	55
Observation/Interview Form	12	-	12
Questionnaire	9	2	11
Questionnaire–Interview Form	2	1	3
Questionnaire–Scale	2	1	3
Scale–Interview Form	5	4	9
Questionnaire–Scale–Interview Form	1	1	2
Scale–Document	-	1	1
Interview Form–Document	1	-	1
Scale–Interview Form–Document	1	-	1
Document Analysis	2	-	2
Activity	1	-	1
Total	87	14	101

As presented in Table 5, scale-based data collection tools have a clear advantage in postgraduate theses prepared on environmental awareness. When examining 87 master's and 14 doctoral studies conducted between 1999 and 2025, it is seen that 55 theses used scales directly or in conjunction with other tools. This situation reveals that researchers generally address environmental awareness through measurable attitude, awareness, and behavior indicators and have adopted the tradition of quantitative measurement.

In terms of data collection tools at the master's level, scale (51 theses) and survey (9 theses) applications have a significant weight. This table shows that the topic of environmental awareness is mostly addressed within the framework of descriptive research and survey models. The preference for these types of tools has enabled the statistical comparison of levels of environmental knowledge, attitudes, and awareness, thus allowing the reflections of environmental education on individuals to be explained with concrete data. In doctoral theses, however, an increase in methodological diversity is observed. Mixed data collection tools (e.g., scale-interview form or questionnaire-interview form combination) have been used more frequently at this level. The use of multiple data collection tools in nine of the doctoral theses prepared indicates that researchers have tended to analyze environmental awareness holistically through numerical data and participant statements. Studies that use the interview form in conjunction with the scale indicate a more in-depth approach to understanding the measurable and experiential aspects of environmental awareness.

The existence of 12 studies based on interview, questionnaire, and observation forms reveals an interest in qualitative methods but also indicates that this field has not yet developed to the desired extent. In contrast, document analyses (4 theses), which have attracted attention in recent years, reveal the emergence of a new academic trend which focuses on evaluating

environmental education in terms of program, course content, and policy documents. Activity-based research suggests that sufficient experience has not yet been accumulated in linking environmental awareness to applied learning processes. This situation reveals that postgraduate studies in the field of environmental awareness are shaped around quantitative tools, that mixed approaches are gaining ground, and that qualitative methods are in a phase of development.

6. Findings Regarding the Distribution of Thesis Topics

The graduate theses included in this study have been thematically classified according to their main research topics based on their content. The table below presents the subject areas focused on by studies related to environmental awareness based on qualitative diversity. In this respect, it provides important data showing the pedagogical, conceptual, and practical contexts in which environmental awareness is used in the literature (Table 6).

Table 6. Distribution of graduate theses on environmental awareness in education according to research topics

Research Topic	Master's	Ph.D.	Total
Teaching of Concepts/Content Related to Environmental Awareness	7	1	8
Determination of Environmental Awareness Level	19	2	21
Obtaining Opinions of Teachers, Pre-service Teachers, and Students	12	-	12
Analysis of Books, Textbooks, and Curricula in the Context of Environmental Awareness	4	-	4
Measuring Attitudes Toward Environmental Awareness	4	-	4
Effects of Various Factors (education, learning methods and techniques, books, projects, family, school, socio-economic status, learning level, etc.) on the Development of Environmental Awareness	41	11	52
Total	87	14	101

As can be observed in Table 6, although postgraduate studies on environmental awareness cover a wide range of topics, they mainly focus on factors influencing the formation of environmental awareness. The majority of the 101 theses prepared between 1999 and 2025 (52 theses) deal with variables determining the development of environmental awareness. These include educational practices, teaching methods, family, school, socio-economic conditions, and projects. This indicates that environmental awareness is considered a dynamic phenomenon shaped by educational processes rather than an abstract concept. Forty-one master's level studies on the subject examined how environmental awareness is established in

the school environment, which teaching methods increase awareness, and which conditions shape students' environmental attitudes. At the doctoral level, 11 studies addressed the subject in a broader context, relating environmental awareness to social and pedagogical contexts.

The relatively high number of studies (21 theses) aimed at determining the level of environmental awareness indicates that the field has long been approached with a descriptive and measuring orientation. The limited number of theses on concept and content teaching and teaching material and program reviews suggests that the reflection of environmental awareness in curricula and resources has not yet been sufficiently addressed. Environmental awareness research initially focused on level determination but has gradually shifted towards an application and education-based orientation.

Conclusions and Discussions

Between 1999 and 2025 in Türkiye, graduate theses prepared in the field of education sciences with a focus on environmental awareness showed a steady increase in terms of number and subject diversity. The number of theses prepared each year began to increase after 2010, reaching its peak in 2019. It has remained stable since 2020. This trend has progressed in parallel with the emergence of environmental issues on the public agenda and the integration of sustainability into education policies (Arya et al., 2024).

Theses prepared on this subject tend to be concentrated on certain well-established institutions based in Ankara and Istanbul, where academics with the necessary knowledge and experience are employed. However, in recent years, this trend has spread to other major universities in Anatolia, which have sufficient academic infrastructure. This situation indicates that, on the one hand, centers with strong research infrastructure are driving the field, while on the other hand, different regional sensitivities are contributing to environmental awareness within their own contexts (Angelaki et al., 2023). Although limited in number, doctoral theses show a tendency toward theoretical depth, indicating that high-level discussions in the field are intensifying.

In the first theses prepared on environmental awareness, it is generally observed that the quantitative tradition is dominant as a method, and consequently, the use of scales and surveys is excessive. Over time, the rise of mixed designs in theses on the subject and the more frequent pairing of qualitative data sources (interviews, observations, documents) indicate that the

subject is beginning to be read in conjunction with layers of environmental experience, values, and context (Aggarwal, 2023). This development opens the door to theoretical enrichment in the field and more nuanced results for application.

The sample profiles of the prepared theses have mainly focused on primary school students, teacher candidates, and teachers; while the topic headings have prominently featured "factors affecting the development of environmental awareness." This picture highlights the importance of acquiring environmental awareness at an early age and the strategic role of teacher training; however, it also indicates that school-external/superstructural layers such as administrators, parents, adult communities, and policy documents have been relatively neglected (Spada et al., 2025). For future studies, multi-stakeholder designs, longitudinal and mixed-method follow-up studies, and systematic document analyses at the program-material-policy level appear to be the main directions that will increase the theoretical depth and practical impact of the field (Zeng & Punjwani, 2025).

It has been observed that postgraduate studies on environmental awareness in Türkiye mainly focus on the factors which influence the formation of environmental awareness. The vast majority of theses prepared were found to be related to variables which determine the development of environmental awareness. These include factors such as educational practices, teaching methods, family, school, socio-economic conditions, and projects. Theses prepared on the subject initially focused on level determination, but over time showed an application and education-based orientation.

Funding

The authors received no financial support for the research, author-ship, and/or publication of this article.

Conflict of Interest Statement

The authors declare that there is no conflict of interest between them regarding this article.

Summary of Contribution Rate Declaration of Researchers

The authors declare that they have contributed equally to the article.

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