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Research Article

Investigation of Postgraduate Theses on Environmental Education in Preschool Field

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Abstract: This study aimed to determine the general tendency of postgraduate theses on environmental education published in the field of preschool education in Türkiye in 2022 and 2023. The data in the study were postgraduate theses on environmental education in the field of preschool education published in full text in the Higher Education Council (YÖK) Theses Center database. The data collected using the transcript analysis method was reported using the PRISMA. The sample of the study was 20 graduate theses accessed from the YÖK Thesis Center database according to the convenience sampling method. A thesis review form was used within the scope of the literature to determine the general tendency of the theses. Descriptive content analysis was used to analyze the data. The reliability of the analysis was ensured according to the consensus of the researchers. According to the findings, it was determined that theses on environmental education were produced equally in both 2022 and 2023, and the majority of these theses were master's theses. In the other findings, the most common topic in the theses was environmental education. According to the findings of the research design, qualitative and mixed (qualitative + quantitative) research design was mostly preferred in theses. The findings of the research group consisted mostly of teachers and preschool students. According to the findings of the sample selection method, the purposive sampling method was mostly used, and according to the data collection tool, the scale was mostly used. The findings of the study were discussed in the light of the literature.

Keywords: Environmental Education, Content Analysis, Preschool Education

1.Introduction

Environmental problems such as the decrease in biodiversity (Naeem, 2002), deforestation (Lawrence et al., 2022), etc., which have been remarkable in the last century, have brought environmental education to the agenda in environmental conferences organized by international organizations such as Stockholm Conference (1972), Tbilisi Declaration (1977). Since environmental education plays an important role in the formation of environmental awareness and environmentally friendly behavior (Erten, 2004), it is important to include environmental education at all levels of education, especially in early childhood education (Educational, Scientific and Cultural Organization, UNESCO, 2017). Environmental education aims to raise individuals with positive attitudes and behaviors towards the environment, that is, environmentally literate individuals (Demir & Yalçın, 2014). In order to form positive behaviors towards the environment, environmental education is a tool for the development of attitudes, values, knowledge and tendencies towards the environment and the establishment of nature-individual relationship (Köseoğlu & Erten, 2022; Ardoin & Bowers, 2020). Environmental education is critical in the preschool education period, where the foundation of the attitudes and behaviors of individuals is laid (Hadela & Andic, 2021; Özkan, 2017). Because in this period, when the foundation of desired behavior is laid, children develop love and empathy for nature; that is, developing their relationship with nature leads to nature-friendly behavior (Erten, 2005). Studies indicate that environmental education in the preschool period encourages individuals to behave in an environmentally friendly manner in adulthood (Chawla, 2020). Rosa et al. (2018) examined the relationship between nature experience and environmentally friendly behavior and found that nature experience acquired in childhood leads to the adoption of environmentally friendly behavior in adulthood.

Environmental education in the preschool period aims to ensure that environmental knowledge and environmentally friendly behaviors are permanent for a lifetime in children during this period when

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learning is fast and curiosity and interest in the environment are intense (Alıcı, 2022). The boundaries, objectives and principles of environmental education were published at the Conference on Environmental Education held in Tbilisi (UNESCO, 1977). These goals set by the International Organization play an important role in shaping environmental education courses. In this case, the question of where countries are in terms of these goals has led them to seek answers through scientific studies. Likewise, studies analyzing environmental education in the world have found that it is important to integrate environmental education with different disciplines and to include new trends in environmental education in the formation of environmental awareness (Masalimova et. al, 2023; Tian et. al., 2024). For example, in the study by Schleicher (1995), it was emphasized that although environmental education in Germany has made progress in the last 20 years, this development has regressed in recent years and should be supported with new and broader perspectives. From this perspective, it can be stated that there is an accumulation of studies on environmental education in preschool education in Türkiye (Özkan, 2017; Taşkın & Şahin, 2008). In these studies, it is seen that issues such as preschool programs, eco-school approach, forest school approach, etc. are emphasized. For example, Sarıbıyık (2022) examined the effect of environmental education on student behavior in the preschool period and concluded that environmental activities positively affected preschool children's behaviors towards the environment. Gülay and Ekici (2010) examined the preschool education program in terms of environmental education and found that the achievements and skills related to environmental education in the program were at a low level. The results of Demir and Yalçın's (2014) study, which examined preschool curriculum in terms of achievements and concepts related to environmental education, support Gülay and Ekici's (2010) study. The contributions of the studies in which various education programs were applied to environmental education were also observed in other studies. In a study in which the education program was examined in terms of the perception of human-environment relationship, the perception of 60-66-month-old preschool children about human-environment relationship changed after the program implementation compared to before the program implementation (Cengizoğlu, 2013). Similarly, Metin (2023) proved that there was a positive change in preschool students' attitudes towards the environment in their studies conducted according to eco-school activities and Uslucan (2016) according to environmental education program practices. Similarly, in another study, it was found that 60-72-month-old children who were included in the sustainable environment education program had higher levels of attitudes and awareness towards the environment than children who were not included in the program (Çakır & Kanak, 2023). In addition to these studies, studies examining preschool education programs in terms of the contribution of various educational approaches to environmental education such as Özer (2023) are quite common in the literature.

In addition to environmental education programs, educational practices, and activities, studies examining the effect of storybooks and/or books prepared with environmental content on environmental education are also found in environmental education studies in preschool field in Türkiye. For example, Özgül (2022) examined 755 picture storybooks for 48-72-month-old children in terms of environmental literacy components and found environmental literacy components in more than half of the picture storybooks. Alıcı (2022) examined the effect of e-book prepared on environmental sustainability together with environmental education and concluded that environmental education integrated with e-book was effective on 57–71-month-old children's environmental sustainability knowledge.

In environmental education studies in the field of preschool education in Türkiye, it is seen that the study group includes preschool teachers and/or pre-service teachers and, to a limited extent, parents and school administrators as well as preschool students. For example, Akalın (2023), in her study on the views of preschool teachers on environmental education practices, concluded that teachers found the program inadequate in terms of environmental education but tried to include different methods and

techniques in the lesson. In parallel with Akalın's study, Özkan (2017), in his research on teachers' opinions, stated that teachers frequently included environmental education activities. Arslan (2023) examined pre-service preschool teachers' mental models of the concept of biological diversity and observed that pre-service teachers had misconceptions about biological diversity. In parallel to Arslan's study, Kıldan and Pektaş (2009) also found that preschool teachers need in-service training on nature. Likewise, Erten (2005) emphasized that knowledge is not effective in preschool teachers' environmental protection behaviors. In parallel to Erten, Türkoğlu (2019), in his study conducted with preschool teachers and pre-service teachers using phenomenology management, stated that while teachers and pre-service teachers were interested in environmental education, teachers were better in practice and pre-service teachers were more knowledgeable. Ikiz (2022) examined the views of preschool teachers and pre-service teachers on the place-based education approach and found that teachers and pre-service teachers considered it an effective approach in creating awareness of nature and society. Altın (2022) and Uğur (2023) showed that pre-service preschool teachers and preschool teachers had high levels of environmental education self-efficacy. Studies are revealing the role of family involvement in children's environmental behavior (e.g. Cengizoğlu, 2023; Demirci, 2023). Looking at the studies examined in terms of families, Erol and Ogelman (2021) examined the attitudes of 5-6-year-old children towards the environment and found that the environmental education program in which families participated had a positive effect on children's attitudes towards the environment. Similarly, Karahan Aydın (2019) reported that family participation in terms of environmental education practices in the preschool period is important for the development of the child.

In summary, it is seen that environmental education plays a critical role in the preschool period in terms of the development of positive attitudes towards the environment, environmentally friendly behavior, and establishing a connection with the environment. From this point of view, determining the general status of studies on environmental education in preschools in Türkiye is an important step in terms of shaping environmental education well. It is expected that studies on preschool environmental education have been increasing in recent years, and the survey model is frequently used in these studies. When the literature is examined, there are some studies evaluating the theses on environment in the field of preschool education conducted between 2000-2021 in Türkiye (Buldur & Keskin, 2022; Ogelman & Güngör, 2015; Barlas & Ogelman, 2023). While Barlas and Ogelman evaluated the theses written between 2005 and 2020 in terms of methodology, Gültekin and Buldur evaluated the theses and articles written between 2000 and 2021 in terms of year, publication type and methodology. Comparable outcomes were observed for the theses examined from 2000 to 2021 when the studies analyzing the theses on environmental education in the field of preschool education were examined. Therefore, to observe the overall trend of theses published in the future, the results of these studies were concentrated on the years after 2021. There is a growing need for research on environmental education due to the growing significance of environmental education, particularly the crucial role that early childhood education plays in promoting environmental awareness. Review articles ask what is being done and what is not being done in environmental research, which helps us see the overall trend of environmental education research and improve the effectiveness of environmental education. We can identify research gaps by regularly conducting analyses of these environmental education studies. Future research ideas can be found in the general trend of environmental education studies that are regularly conducted to assess the efficacy of environmental education, which aims to increase environmental awareness in young children. For environmental education programs, the learning-teaching process and educators, the analysis of environmental education research is therefore crucial. Furthermore, in several studies that sought to characterize the state of environmental education in the preschool sector, Buldur and Keskin (2022) discovered 33 postgraduate studies carried out over 21 years, and Gülay Ogelman and Güngör (2015) discovered six postgraduate theses over 14 years. However, in the current study, 20 postgraduate theses were found in just one year. This shows that

research on environmental education in preschool education has gained momentum recently. To show which areas of environmental education are concentrated and which areas have gaps, researchers can benefit greatly from comparing this increase with the collected study topics of the previous 20 years. As a result, rather than repeating previous research, the current study is anticipated to add to the variety of subjects and methodologies. Likewise, there is no study examining postgraduate theses focused on environmental education in 2022 and 2023. To close this gap, it is thought that there is a need to determine the general trend of theses on environmental education in the field of preschool education in 2022 and 2023. In this context, it is expected to shape environmental education and guide researchers, education experts and teachers for future studies. In this study, postgraduate theses written on environmental education in the field of preschool education between 2022 and 2023 were examined.

1.1. Purpose of the research

The aim of the study is to determine the general trend in terms of the title, subject, and method (research design/type, method, sample, sampling method, data collection tool) of the postgraduate theses on environmental education in the preschool field between 2022 and 2023 in Türkiye.

The main problem of this research is what is the general trend of the postgraduate theses on environmental education in the field of preschool education from the start of January 2022 to the end of December 2023? In this direction, answers to the following sub-questions were sought;

- What is the distribution of postgraduate theses on environmental education in the preschool field conducted between 2022 and 2023, according to education programs?
- What is the distribution of postgraduate theses on environmental education in the preschool field conducted between 2022 and 2023, according to the years?
- What is the distribution of the postgraduate theses on environmental education in the preschool field conducted between 2022 and 2023, according to the universities where they were produced?
- What is the distribution of the postgraduate theses on environmental education in the preschool field conducted between 2022 and 2023 according to their subjects?
- What is the distribution of the postgraduate theses on environmental education in the preschool field conducted between 2022 and 2023, according to research design/type?
- What is the distribution of postgraduate theses on environmental education in the preschool field conducted between 2022 and 2023, according to the research method?
- What is the distribution of postgraduate theses on environmental education conducted between 2022 and 2023, according to the sample group?
- What is the distribution of the postgraduate theses on environmental education in the preschool field conducted between 2022 and 2023, according to the sampling method?
- What is the distribution of postgraduate theses on environmental education between 2022 and 2023, according to data collection tools?

2. Method

2.1. Research design

The design of this study is qualitative research. Descriptive content analysis was used as the method (Çalık & Sözbilir, 2014). Descriptive content analysis is used to systematically examine and sort independent qualitative and quantitative studies of a field in depth and to identify general trends in that field. The results of the analysis are expected to guide future studies in the field (Ültay et al., 2021). The research was conducted following research and publication ethics.

2.2. Research material

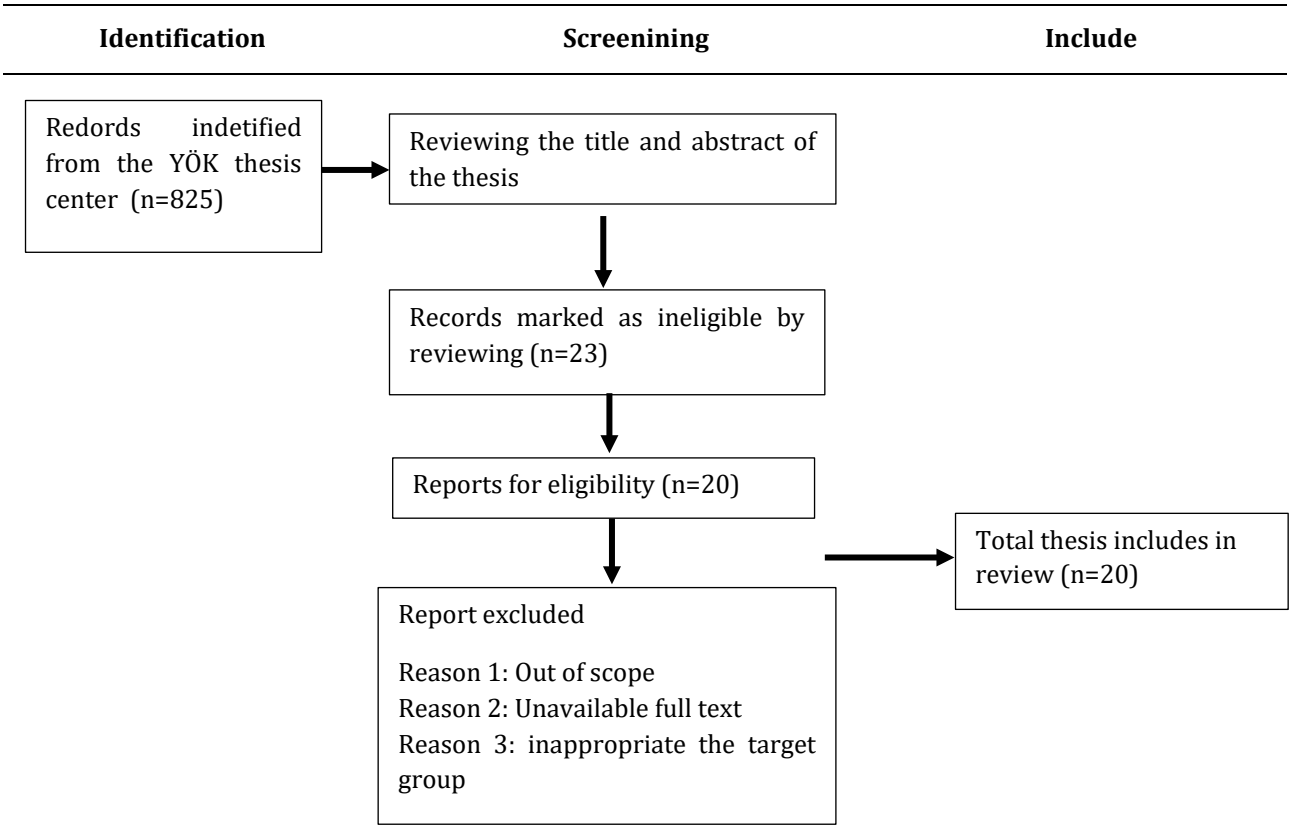
The population of the study is the postgraduate theses on the environment in the preschool field published in Türkiye in 2022 and 2023. As an extension of earlier thesis review studies on the environment in the preschool field, this study was carried out in January and February of 2024. The Council of Higher Education (YÖK) thesis search page was used to review theses with full access permission for the years after 2021. The keywords "environmental education," "preschool," "early childhood," and "child and environment" were used to search the thesis search page. We looked over the abstracts of the theses we found. Theses that were appropriate for the study's objectives and available in full text were added to the collection following the abstract review. The sample was selected by convenient sampling method since it was aimed to have access to the full text of the theses in YÖK Thesis Center database over the Internet. The sample of the study consisted of a total of 20 full-text graduate theses found in the YÖK Thesis Center database over the Internet (Appendix 1).

2.3. Data collection tool

The data collected using the transcript analysis method was reported using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guideline, which is recognized as a scientific standard (Figure 1). The theses included in the reporting were chosen after the titles, abstracts, and keywords of the theses were reviewed by the PRISMA guidelines. The thesis classification form (Sarı, 2011) was used as a data collection tool for analysis. The thesis classification form includes the following headings: thesis title, thesis topic, thesis research method (quantitative, qualitative, mixed), thesis sample (sample level, sample size), data collection tools, and data analysis method. In the data collection tool of this research, Sarı's thesis review form was taken into consideration, and the titles of the thesis, subject, and method (design, method, sample group, data collection tool) were discussed in the data collection form of this research.

Figure 1

PRISMA Flow Diagram



Reference: Page et al., 2021

2.4. Data analysis

The study was analyzed using descriptive statistics. Percentage (%) and frequency (f) were used to analyze the data. In accordance with Sarı's thesis review form, the title and method sections of the examined theses were moved to an Excel file. The data's validity and reliability were assessed prior to the descriptive analysis. According to the thesis review form, the theses were reassessed at various points in time regarding the suitability of the measurements because validity is the interpretation of measurements (Bademci, 2019). In order to ensure the reliability of the study, the researchers evaluated the consistency of the coding according to the thesis classification form. In other words, the consensus among the coders was examined for coding reliability. Using Miles and Huberman (2021:278) formula (Reliability = Consensus/(Consensus + Disagreement)), the coding agreement rate between the coders was 95%.

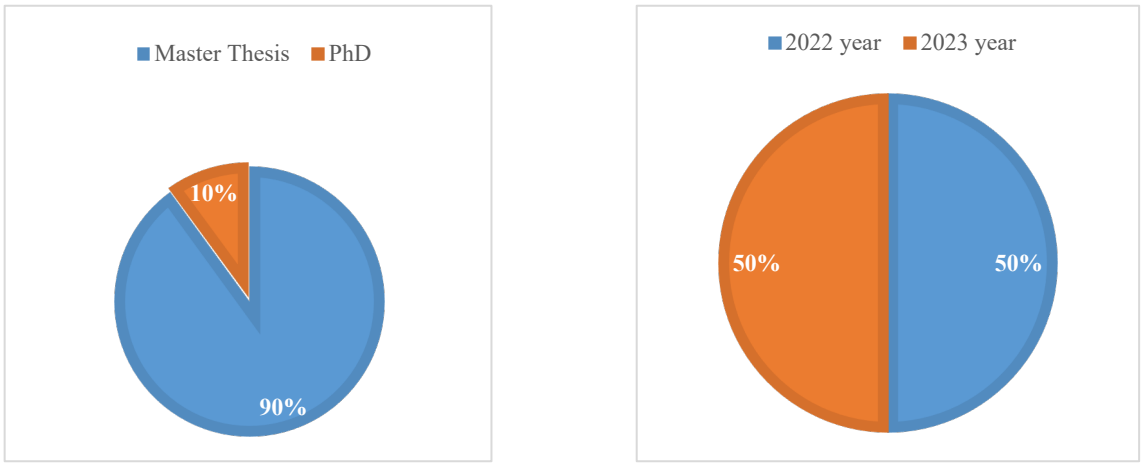
3. Results

3.1. Title of postgraduate theses

The distribution of postgraduate theses on environmental education in the field of preschool education between 2022 and 2023 according to their title is shown in Figure 2.

Figure 2

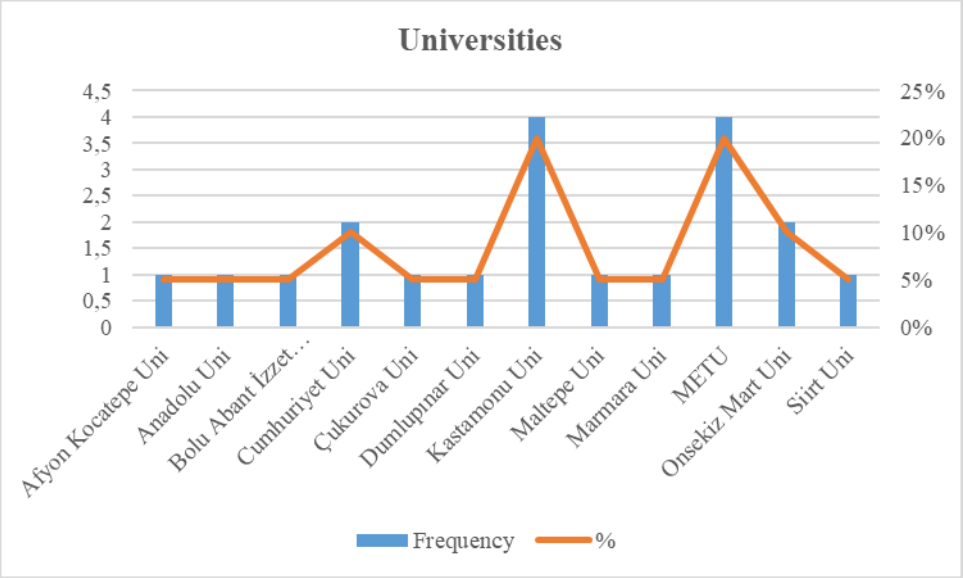
Distribution of Theses by Program Type and Year of Publication



According to Figure 2, 90% of the postgraduate theses on environmental education in the preschool field between 2022 and 2023 were completed in the master's program, while 10% belonged to the doctoral program. While 50% of these theses were published in 2022, 50% were published in 2023.

Figure 3

The University Where the Thesis Was Prepared



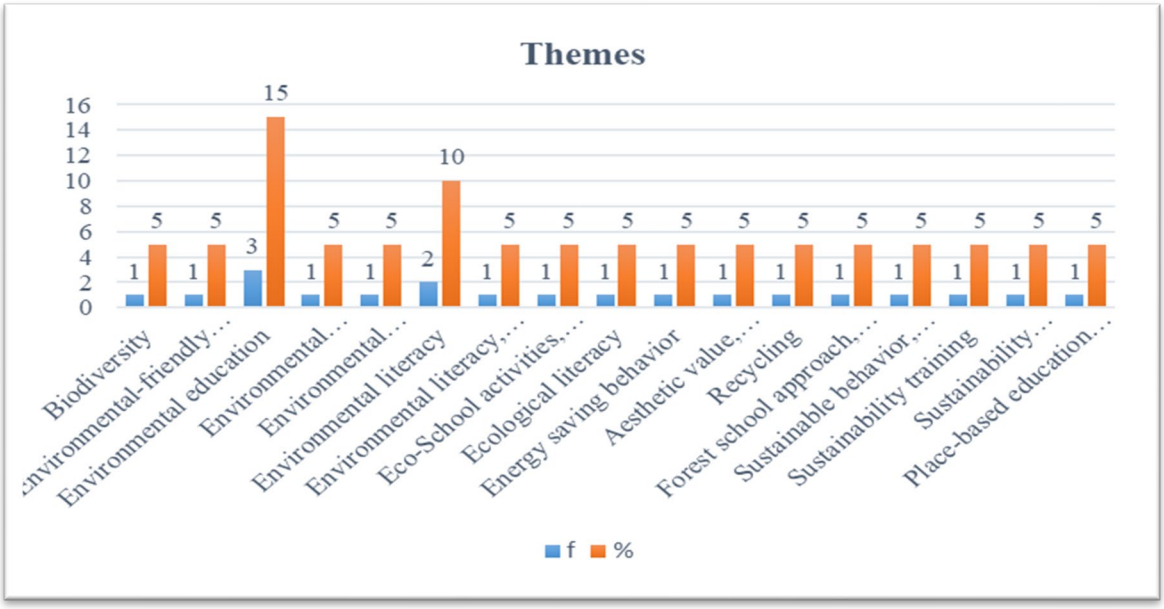
When Figure 3 is examined, 20% of the postgraduate theses on environmental education in the preschool field between 2022 and 2023 were at METU and Kastamonu University, 10% at Cumhuriyet and Onsekiz Mart Universities, while 5% were at Afyon Kocatepe, Anadolu, Çukurova, Dumlupınar, Maltepe, Marmara and Siirt Universities.

3.2. Subjects of postgraduate theses

The distribution of environmental education postgraduate theses in the field of preschool environmental education between 2022 and 2023 according to the subjects is shown in Figure 4.

Figure 4

Thesis Topics



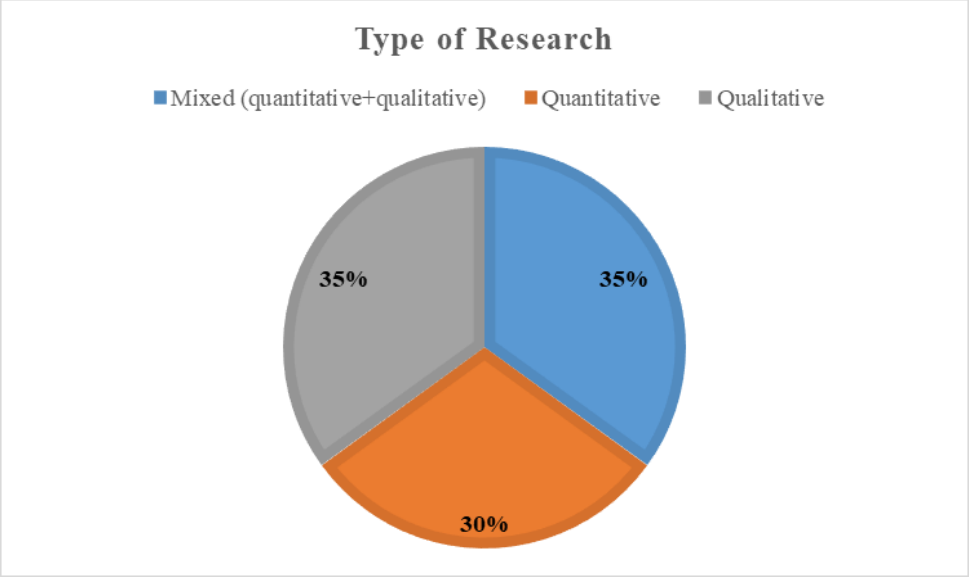
According to Figure 4, when we look at the distribution of topics in theses focused on environmental education in the field of preschool education between 2022 and 2023, environmental education (15%) was the most common topic, followed by environmental literacy (10%). Biodiversity, energy saving, etc. (5%) were the least common topics.

3.3. Research design/type in postgraduate theses

The distribution of research design/type in postgraduate theses on environmental education in the preschool field between 2022 and 2023 is shown in Figure 5.

Figure 5

Type of Research



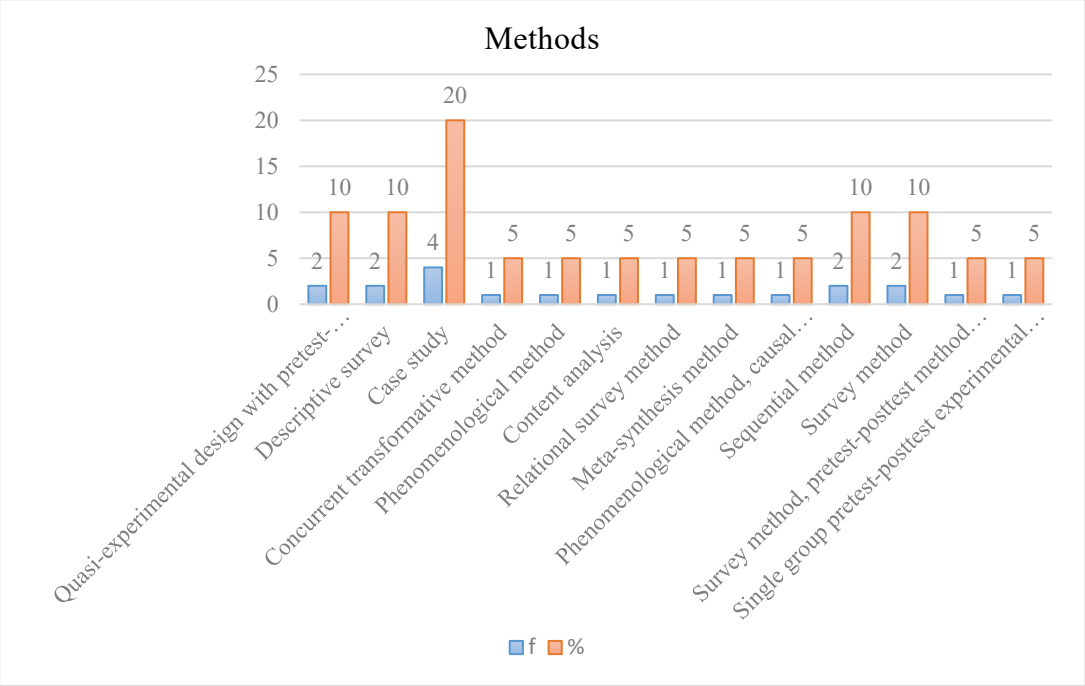
When Figure 5 is examined, it is determined that the preferred research type in theses on the environment in the field of the preschool environment between 2022 and 2023 were qualitative (35%) and mixed (quantitative + qualitative) methods (35%).

3.4. Research method used in postgraduate theses

The research methods used in the postgraduate theses on environmental education in the preschool field between 2022-2023 are shown in Figure 6.

Figure 6

Research Method



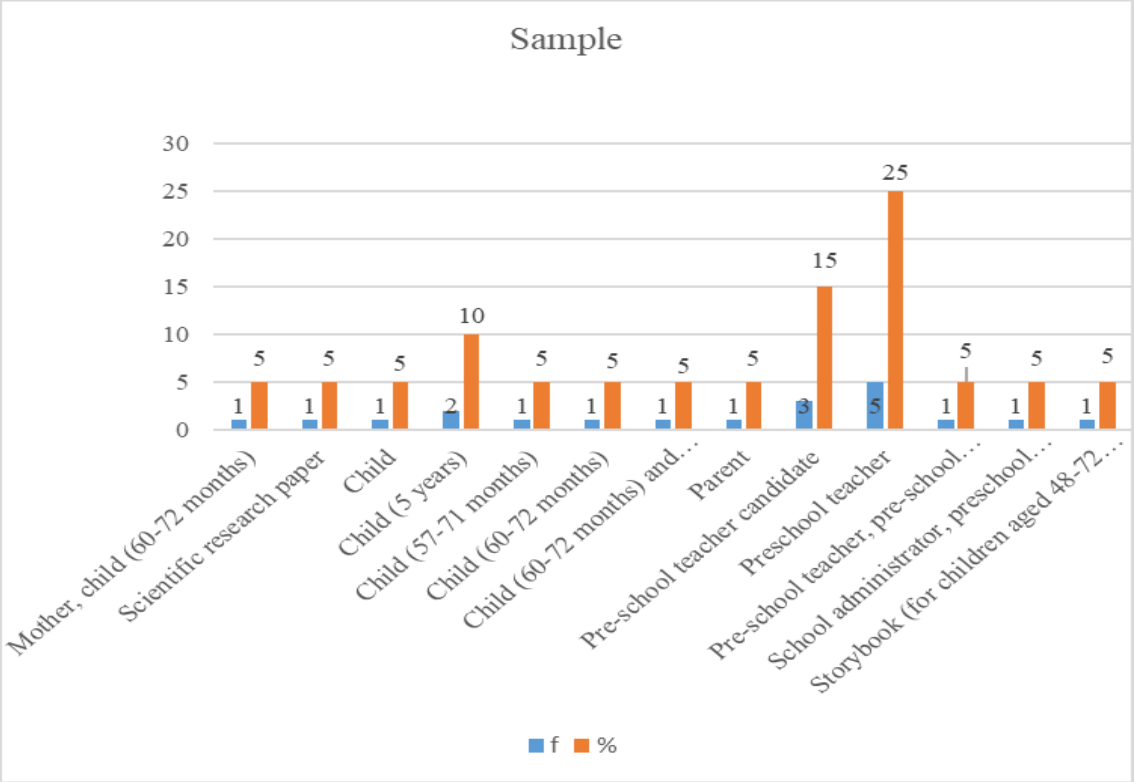
When Figure 6 is examined, it is seen that the case study method (20%) was preferred the most in theses on environmental education in the preschool field between 2022 and 2023, followed by quasi-experimental with control group (10%), descriptive survey (10%), sequential (10%) and survey (10%) methods. The least preferred methods are simultaneous transformational (5%), phenomenological (5%), content analysis (5%), relational survey (5%), meta-synthesis (5%), phenomenological (5%), without control group (5%) and action research (5%).

3.5. Sample group of postgraduate theses

The sample group in the postgraduate theses on environmental education in the preschool field between 2022-2023 is shown in Figure 7.

Figure 7

Sample Group



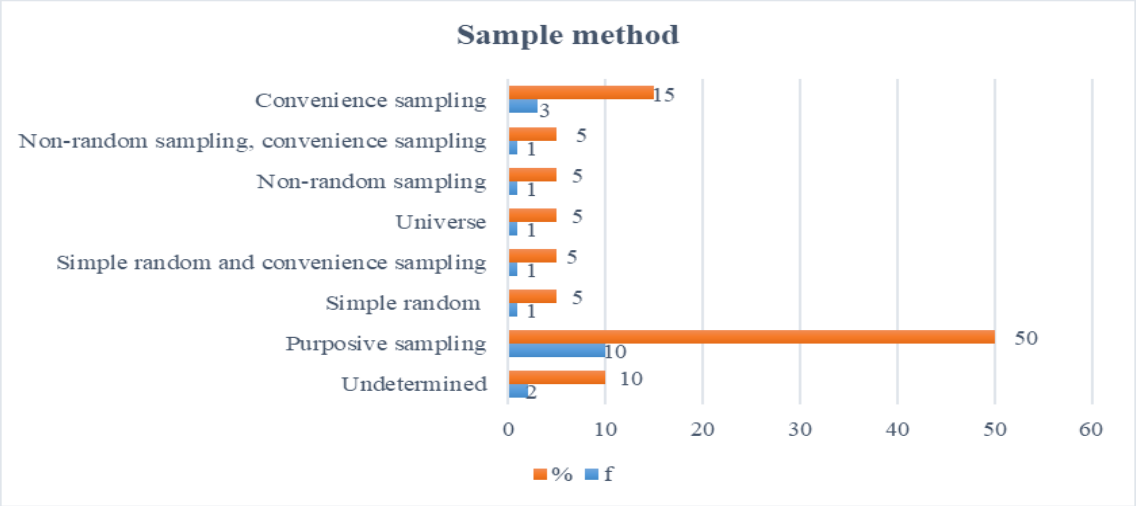
When Figure 7 is analyzed, in the theses on environmental education in the field of preschool education between 2022 and 2023, the sample group consists mostly of preschool teachers (25%) and children (25%). This is followed by pre-service teachers (15%). The last groups are mother+child, scientific article, storybook, preschool teacher candidate+teacher, school administrator+preschool teacher+parent+child (5%).

3.6. Sampling method of postgraduate theses

The sampling method used in postgraduate theses on environmental education in the preschool field between 2022 and 2023 is shown in Figure 8.

Figure 8

Sampling Method



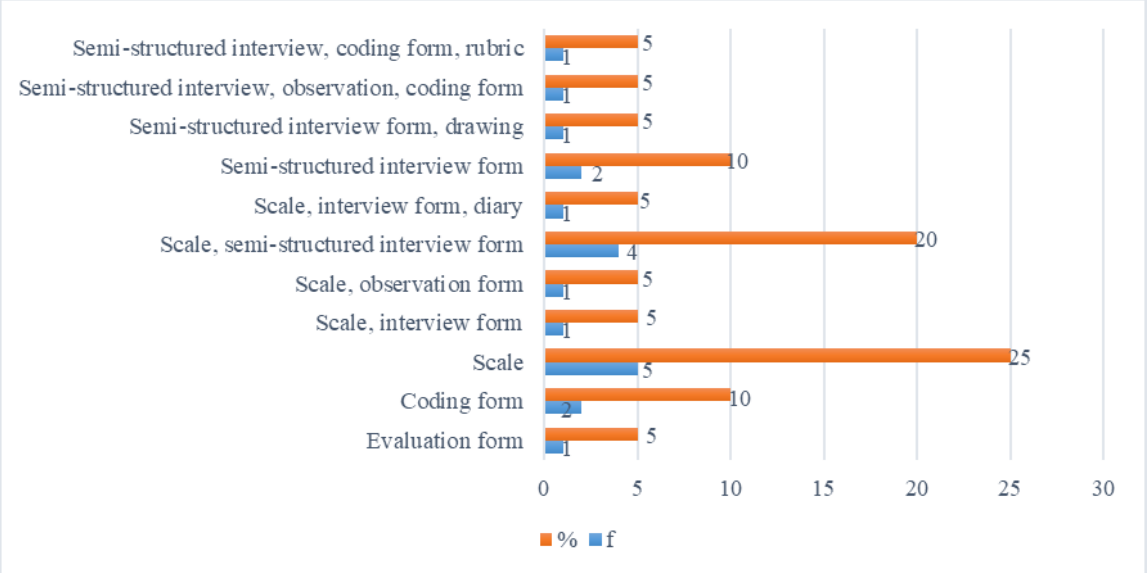
According to Figure 8, it is seen that the sampling method used in the theses on the environment in the field of preschool environment between 2022 and 2023 is mostly purposive sampling (50%). This is followed by convenience sampling (15%). The least common sampling methods are non-random + convenience sampling (5%), non-random sampling (5%), simple random + convenience sampling (5%) and simple random sampling (5%). In the graph, there is one thesis that did not use a sampling method using the population and two theses that did not specify the sampling method.

3.7. Data collection tools used in postgraduate theses

The distribution of the data collection tools used in the postgraduate theses on environmental education in the preschool field between 2022 and 2023 is shown in Figure 9.

Figure 9

Data Collection Tools



According to Figure 9, in the postgraduate theses on environmental education in the preschool field between 2022 and 2023, the scale (graded scoring) (25%) was mostly used as a data collection tool. Then, the scale and semi-structured interview form (20%) were used together. According to the figure, semi-structured interview form (10%) and coding form (10%) are the third most used tools. The last

use of one or more measurement tools was found as evaluation form (5%), scale+observation form (5%), scale+interview form+diary (5%) and semi-structured interview+observation+coding form (5%).

4. Discussion and Conclusion

This study presents a systematic analysis of postgraduate theses on environmental education in the field of preschool education in Türkiye, focusing on the period between 2022 and 2023. The analysis of 20 full-text theses identifies several noteworthy patterns that both confirm the results of earlier research and offer fresh perspectives on the developing field of early childhood environmental education studies.

First, the fact that the majority of the theses were master's level studies is consistent with earlier findings (e.g., Barlas & Ogelman, 2023; Buldur & Keskin, 2022; Karakoyun & Uzun, 2022). Barlas and Ogelman (2022) emphasized in their study that theses on environmental education in the preschool field were not published in 2005 and 2010, and that there was an increase in studies on environmental education in the following years, and that this situation was related to the achievements in the curricula for environmental education. However, what stands out is the significant increase in the number of theses within a short timeframe, which may reflect growing national and global attention to sustainability and climate education, as aligned with UNESCO's Education for Sustainable Development (ESD) framework (UNESCO, 2020). This growth suggests an encouraging momentum among early-career researchers to address environmental issues from an educational perspective.

Second, the findings indicate that research topics still largely center on general environmental education and environmental literacy, with fewer studies delving into more specific or emergent areas such as climate change, biodiversity, or ecological justice. Similarly, Karakoyun and Uzun (2022) examined the theses published in Türkiye between 2011 and 2022 on environmental education and found that "environmental education" was the most common thesis topic. This thematic concentration, although valuable, points to an opportunity for diversifying research topics to include underrepresented but increasingly urgent environmental issues (Tilbury, 1995; Davis, 2009). For instance, integrating climate anxiety in young children or exploring culturally relevant pedagogies for sustainability could provide richer, context-specific insights.

The methodological trends observed—especially the predominance of qualitative and mixed-method designs—highlight researchers' intent to gain a more nuanced understanding of preschool children's and educators' experiences. While this result partially supports Buldur and Keskin's (2022) study, it contradicts the studies of Çiftçi and Ersoy (2019). According to the preferred research method in the theses, survey and case methods were the most common, while the phenomenological method was the least common. However, there remains a relative scarcity of robust experimental studies, which are crucial for evaluating the effectiveness of interventions in environmental education. This mirror concerns raised by Çiftçi and Ersoy (2019), who noted the imbalance between descriptive and intervention-based research in the field.

Regarding sample groups, the dominant focus on preschool teachers, children, and pre-service teachers underscores the importance placed on both implementers and recipients of environmental education. Yet, the relative neglect of other stakeholders, such as families, school administrators, and community members, suggests the need to adopt a more ecological approach (Bronfenbrenner, 1977). Including these actors can offer a more holistic perspective on the environmental socialization processes of young children.

Another crucial insight from this study is the variety and combination of data collection tools, with scales and semi-structured interviews being most commonly used. Kahyaoğlu (2016) stated that questionnaires were mostly used in the scientific studies he analyzed in his study, while Çiftçi and Ersoy (2019) stated that interview forms were mostly used in the scientific studies they analyzed in their study. While these tools are effective for capturing perceptions and practices, future research could

benefit from incorporating more child-centered methods such as drawing-based techniques, storytelling, or participatory video, which have been increasingly recommended for research with young children (Clark, 2010; Harwood & Collier, 2017).

The increasing reliance on purposive and convenience sampling may raise questions about the generalizability of findings. Thus, broader and more inclusive sampling strategies could be considered in future studies to enhance representativeness and capture diverse ecological contexts across Türkiye.

In sum, this study contributes to the mapping of current research trends in preschool environmental education and serves as a baseline for identifying strengths, limitations, and future directions. It highlights a clear need for broader thematic exploration, diversification of research designs, inclusion of multiple stakeholders, and the adoption of innovative and child-centered methodologies. As environmental challenges grow in complexity, so too must the research that informs educational responses, particularly during early childhood—a critical window for shaping sustainable attitudes and behaviors.

These findings from Türkiye resonate with international trends observed in earlier and contemporary environmental education research. For example, Chawla (2002) emphasized the importance of integrating children's perspectives into sustainable development efforts, arguing that young learners bring unique insight and creativity to environmental thinking when meaningfully engaged. Similarly, Rickinson et al. (2004), in their comprehensive review of outdoor learning research, highlighted the critical role of experiential and place-based education in shaping children's environmental understanding and attitudes—a notion echoed by many of the preschool theses reviewed in this study. Moreover, Athman and Monroe (2004) demonstrated that environment-based education significantly enhances students' achievement motivation, offering evidence that such approaches not only foster environmental awareness but also support broader educational outcomes.

Taken together, these international studies support the idea that environmental education in early childhood is most impactful when it moves beyond content delivery to include active, participatory, and context-sensitive learning. While Turkish postgraduate theses have increasingly embraced these ideals through diverse methodologies, the integration of global best practices, such as community-based projects, outdoor experiential learning, and child-led inquiry, can further strengthen the scope and effectiveness of future research and practice in this field.

4.1. Recommendations

The preschool period, in which the foundation of life is shaped, is a critical period for raising environmental awareness (Özkan, 2017). The results of scientific research are important in terms of conducting environmental education more effectively in this period for environmental protection. For this reason, in future research, based on the results obtained in this study, it is thought that using research methods that have not been included so far to reach results by evaluating the environmental education, stakeholders, and educational materials from different angles for more effective education, taking into account the ecological systems theory (Bronfrenbrenner, 1977), considering other stakeholders related to the preschool child as a research group, and focusing on the diversity of data collection tools will provide a wealth of research on environmental education in the preschool field

References

Altn, M. (2022). *Effect of pre-school teaching student's self-efficency of environmental education and environmental ethics awareness perception on their ecological citizenship levels* [Unpublished master's thesis]. Çanakkale Onsekiz Mart University.

Ardoin, N. M., & Bowers, A. W. (2020). Early childhood environmental education: A systematic review of the research literature. *Educational Research Review*, 31, 100353. https://doi.org/10.1016/j.edurev.2020.100353

Athman, J., & Monroe, M. (2004). The Effects of Environment-Based Education on Students' Achievement Motivation. *Journal of Interpretation Research*. 9(1), 9–25. https://doi.org/10.1177/109258720400900102

Bademci, V. (2019). Validity: What is it? What is it not? *the Journal of Research in Education and Society (JRES)*, *6*(2), 373-385. https://dergipark.org.tr/en/download/article-file/904540

Barlas, F. T., & Ogelman, H. G. (2023). Investigation of environmental education theses in the field of preschool education between 2005-2020. *International Journal of New Trends in Arts, Sports & Science Education (Ijtase)*, *12*(1), 23-37. https://www.ijtase.net/index.php/ijtase/issue/archive

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, *32*(7), 513–531. https://doi.org/10.1037/0003-066X.32.7.513

Buldur, A., & Keskin, M. E. (2022). Content Analysis of studies on environmental education in pre-school education. *The Usak University Journal of Educational Research*, *8*(3), 73-86. https://doi.org/10.29065/usakead.1192268

Cengizoğlu, S. (2013). *Investigating potential of education for sustainable development program on preschool children's perceptions about human-environment interrelationship*. [Master's thesis, METU].

Chawla, L. (2002). "Insight, creativity and thoughts on the environment": Integrating children and youth into human settlement development. *Environment and Urbanization*, *14*(2), 11–21. https://doi.org/10.1177/095624780201400202

Chawla, L. (2020). Childhood nature connection and constructive hope: A review of research on connecting with nature and coping with environmental loss. *People and Nature*, *2*(3), 619-642. https://doi.org/10.1002/pan3.10128

Clark, A. (2010). *Transforming children's spaces: Children's and adults' participation in designing learning environments*. Routledge. ISBN 0-203-85758-5.

Çakır, B., & Kanak, M. (2023). Providing environmental literacy skills to preschool children: An experimental study. *Journal of Milli Egitim*, *52*(1), 851-874. https://doi.org/10.37669/milliegitim.1282579

Çalık, M., & Sözbilir, M. (2014). Parameters of content analysis. *Journal of Education and Science*, *39*(174), 33-38. http://dx.doi.org/10.15390/EB.2014.3412

Çifçi, M., & Ersoy, M. (2019). Trends of research in the field of preschool education: A content analysis. *Cumhuriyet International Journal of Education*, *8*(3), 862-886. http://cije.cumhuriyet.edu.tr/tr/download/article-file/813463

Davis, J. M. (2009). Revealing the research 'hole'of early childhood education for sustainability: A preliminary survey of the literature. *Environmental Education Research*, *15*(2), 227–241. https://doi.org/10.1080/13504620802710607

Demir, E., & Yalçın, H. (2014). Environmental education in Turkey. *Turkish Journal of Scientific Reviews 2*, 7-18. https://derleme.gen.tr/index.php/derleme/article/view/239/236

Demirci, G. E. (2023). *Exploring parental environmentally significant behaviors performed individually and with children*. [Master's thesis, METU].

Erol, A., & Ogelman, H. G. (2021). Investigation of the effect of environmental education program with family involvement based on project approach on 5-6-year-old children's attitudes towards the environment. *Journal of Milli Egitim*, *50*(232), 133-160. https://doi.org/10.37669/milliegitim.737551

Erten, S. (2004). What is environmental education and environmental awareness? How should environmental education be? *Journal of Environment and Human*, *65*(66), 83-94.

Erten, S. (2005). Investigation of preservice preschool teachers' behaviors related to environmental awareness. *Hacettepe University Journal of Education*, *28*(28), 91-100. https://dergipark.org.tr/tr/pub/hunefd/issue/7808/102424

Gülay Ogelman, H., & Güngör, H. (2015). Investigating the studies on environmental education ın preschool period in Turkey: Investigating the Articles and dissertations between 2000-2014. *Mustafa Kemal University Journal of Social Sciences Institute, 12*(32), 180-194. https://dergipark.org.tr/tr/pub/mkusbed/issue/19578/208931

Gülay, H., & Ekici, G. (2010). The analysis of the ministry of national education pre-school education programme in the sense of environmental education. *Journal of Turkish Science Education*, *7*(1), 74-84. https://hdl.handle.net/11499/41750

Hadela, J., & Anđić, D. (2021). Necessary competences of early childhood educators for implementing education for sustainable development: A review of the research literature. *Proceedings EDULEARN21 Conference*, https://doi.org/10.21125/edulearn.2021.2107

Harwood, D., & Collier, D. (2017). Images of play experiences through a child's lens: An exploration of play and digital media with young children. *International Journal of Early Childhood*, *49*(2), 229–242. https://doi.org/10.1007/s13158-017-0181-9

İkiz, Ş. (2022). *Evaluation of preschool teachers' and prospective teachers' views on place-based education approach (Çanakkale Province Case)* [Unpublished master's thesis, Marmara University].

Kahyaoğlu, M. (2016). A study on environmental education research in Turkey: A content analysis study. *Marmara Geographical Review, (34),* 50-60. https://dergipark.org.tr/tr/pub/marucog/issue/24661/260862

Karahan Aydın, B. (2019). *Perceptions of pre-school teachers on sustainable environmental education* [Master's thesis, Kocaeli University].

Karakoyun, N., & Uzun, N. (2022). Analysis of postgraduate theses on environmental education published between 2011-2022. *Ihlara Journal of Educational Research, (1),* 51–65. https://dx.doi.org/10.47479/ihead.1111586

Kildan, O., & Pektaş, M. (2009). Preschool teachers' views regarding the teaching of the subjects related to science and nature during early childhood. *Ahi Evran University Journal of Education Faculty*, *10*(1), 113-127. https://dergipark.org.tr/tr/pub/kefad/issue/59520/855974

Köseoğlu, P., & Erten, S. (2022). How environmental education must be according to the Paris Agreement? *The Buca Faculty of Education Journal, (54),* 1528-1544. https://doi.org/10.53444/deubefd.1207951

Lawrence, D., Coe, M., Walker, W., Verchot, L., & Vandecar, K. (2022). The unseen effects of deforestation: Biophysical effects on climate. *Frontiers in Forests and Global Change*, *5,* 49. https://doi.org/10.3389/ffgc.2022.756115

Masalimova, A. R., Krokhina, J. A., Sokolova, N. L., Melnik, M. V., Kutepova, O. S., & Duran, M. (2023). Trends in environmental education: A systematic review. *EURASIA Journal of Mathematics, Science and Technology Education*, *19*(2), em2228. https://doi.org/10.29333/ejmste/12952

Metin, T. (2023). *The investigation of the effect of Eco-Schools program on responsible behavior, environmental awareness and basic skill levels of preschool students* [Unpublished master's thesis]. Afyon Kocatepe University.

Miles, M. B. ve Huberman, A. M. (2021). *Qualitative data analysis.* (4. Baskı). In S. Akbaba Altun ve A. Ersoy (Trans. Ed.). Ankara: Pegem Akademi.

Naeem, S. (2002). Ecosystem consequences of biodiversity loss: The evolution of a paradigm. *Ecology*, *83*(6), 1537-1552. https://doi.org/10.1890/0012-9658(2002)083[1537:ECOBLT]2.0.CO;2

Özer, M. (2023). *The analysis of the applications that aim to develop ecological literacy skills in pre-school education: A case study* [Unpublished doctoral dissertation]. Anadolu University.

Özgül, T. (2022). *Representations of environmental literacy: A content analysis of picture storybooks for 48–72-month-old children* [Unpublished master's thesis]. Middle East Technical University.

Özkan, B. (2017). Investigating views of preschool teachers about environmental education. *Academic Sight International Refereed Online Journal*, *1*(62), 80-87. https://dergipark.org.tr/tr/pub/abuhsbd/issue/32976/366574

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E. McDonald, S., McGuinness, L., A., Stewart, L., A., Thomas, J., Tricco, A. C., Wlech, V., Whiting, P., & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *The BMJ*, 372:n71. https://doi.org/10.1136/bmj.n71

Rickinson, M., Dillon, J., Teamey, K., Morris, M., Choi, M. Y., Sanders, D., & Benefield, P. (2004). *A review of research on outdoor learning*. National Foundation for Educational Research & King's College London

Rosa, C. D., Profice, C. C., & Collado, S. (2018). Nature experiences and adults' self-reported pro-environmental behaviors: The role of connectedness to nature and childhood nature experiences. *Frontiers in psychology*, *9*, 365712. https://doi.org/10.3389/fpsyg.2018.01055

Sarı, Ş. N. (2011). *The content analysis og graduate theses written between 2000 and 2010 in the field of chemistry education* [Master's thesis, Gazi University].

Sarıbıyık, S. K. (2022). *Investigation of the effects of pre-school environmental education on student behaviors* [Master thesis, Kastamonu University].

Schleicher, K. (1995). Trends and current state of environmental education in Germany. In W. Bos & R. Lerman (Eds.), *Reflections on educational achievement* (pp. 230–255). Waxman.

Taşkın, Ö., & Şahin, B. (2008). The Term "Environment" and six years old kindergarten children. *Pamukkale University Journal of Education (PUJE)*, *1*(1), 1-12. https://dergipark.org.tr/tr/pub/pauefd/issue/11142/133290

Tian, Y., Jin, Y., Zhao, Y., Du, Y., Shen, S., & An, J. (2024). Analysis of Knowledge Graph: Hotspots and Future Trends in Environmental Education Research. *Sustainability*, *16*(6), 2378. https://doi.org/10.3390/su16062378

Tilbury, D. (1995). Environmental education for sustainability: Defining the new focus of environmental education in the 1990s. *Environmental Education Research*, *1*(2), 195–212. https://doi.org/10.1080/1350462950010206

Türkoğlu, B. (2019). Opinions of pre-school teachers and pre-service teachers on values education in the pre-school period: The case of Konya province. *Pegem Journal of Education and Instruction*, *9*(2), 381-412. http://dx.doi.org/10.14527/pegegog.2019.012

Uğur, G. (2023). *A research on the pre-school teachers' environmental education competencies* [Master's thesis, Siirt University].

UNESCO. (1977). *Tbilisi Declaration: Intergovernmental Conference on Environmental Education.* https://unesdoc.unesco.org/ark:/48223/pf0000032763?posInSet=3&queryId=30a3b3907746-4c54-8b52-d10446db5feb

UNESCO. (1977). *The Intergovernmental Conference on Environmental Education*. https://unesdoc.unesco.org/ark:/48223/pf0000032763

UNESCO. (2017). *Education for Sustainable Development Goals: Learning objectives*. https://unesdoc.unesco.org/ark:/48223/pf0000247444

United Nations. (1972). *United Nations Conference on the Human Environment: Stockholm Conference 1972*. https://www.un.org/en/conferences/environment/stockholm1972

United Nations. (1972). *United Nations Conference on the Human Environment, 5–16 June 1972,* Stockholm. https://www.un.org/en/conferences/environment/stockholm1972

Uslucan, S. (2016). *The effects of the environmental education program on pre-school children's (60-7 mounth) environmental attitudes (Sample for Çanakkale)* [Master's thesis, Çanakkale Onsekiz Mart University].

Ültay, E., Akyurt, H., & Ültay, N. (2021). Descriptive content analysis in social sciences. *Journal of Social Sciences*, *(10)*, 188-201. https://doi.org/10.21733/ibad.871703

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Appendix 1 List of Theses Analyzed in the Study

Akalın, İ. T. (2023). 60-72 aylık çocukların çevreye yönelik sürdürülebilir davranışlarının ve okul öncesi öğretmenlerinin çevre eğitimi uygulamaları hakkında görüşlerinin incelenmesi. [Unpublished master's thesis]. Dumlupınar Üniversitesi, Kütahya.

Alıcı, A. Y. (2022). Okul öncesi çocuklar için e-kitap ile bütünleştirilmiş sürdürülebilirlik eğitimi. [Unpublished master's thesis]. Çukurova Üniversitesi, Adana.

Alınmaz, N. (2023). Okul öncesi öğretmenlerinin çevre okuryazarlığına ilişkin yeterliliklerinin incelenmesi. [Unpublished master's thesis]. Kastamonu Üniversitesi.

Altın, M. (2022). Okul öncesi öğretmenliği öğrencilerinin çevre eğitimine ilişkin öz-yeterlik ve çevre etiği farkındalık algılarının ekolojik vatandaşlık düzeylerine etkisi. [Unpublished master's thesis]. Çanakkale Onsekiz Mart Üniversitesi, Çanakkale.

Arslan, H. (2023). Okul öncesi öğretmen adaylarının biyoçeşitlilik kavramına yönelik zihinsel modellerinin incelenmesi. [Unpublished master's thesis]. Kastamonu Üniversitesi, Kastamonu.

Cengizoğlu, S. (2023). Okul öncesi dönem çocuklarının ve annelerinin organik atıkların geri dönüşümüne ilişkin bilgilerinin ve annelerin konuşma stilinin çocukların bellek çıktıları üzerindeki rolünün incelenmesi. [Unpublished doctoral dissertation]. Orta Doğu Teknik Üniversitesi, Ankara.

Çakır, B. (2023). Sürdürülebilir çevre eğitim programının 60-72 aylık çocukların çevreye yönelik tutum ve farkındalık düzeyine etkisi. [Unpublished master's thesis]. Cumhuriyet Üniversitesi, Sivas.

Demirci, G. E. (2023). Exploring parental environmentally significant behaviors performed ındividually and with children. [Unpublished master's thesis]. Middle East Technical University.

Düzgün, E. (2022). Eko ve Eko Olmayan Okullardaki Okul Öncesi Öğretmenlerinin Öz Bildirimlerine Dayalı Enerji Tasarrufu Davranışları. [Unpublished master's thesis]. Middle East Technical University, Ankara.

Edeş, H. (2022). Orman okulu yaklaşımı eğitimi alan okul öncesi öğretmenlerinin mesleki yeterliklerine ilişkin algı düzeylerinin incelenmesi. [Unpublished master's thesis]. Maltepe Üniversitesi, İstanbul.

Elibol, H. (2022). Okul öncesi dönem 5 yaş çocuklarının estetik değeri açısından çevre farkındalıkları. [Unpublished master's thesis]. Sivas Cumhuriyet Üniversitesi.

İkiz, Ş. (2022). Okul öncesi öğretmen ve öğretmen adaylarının yer temelli eğitim yaklaşımına yönelik görüşlerinin değerlendirilmesi (Çanakkale İli Örneği). [Unpublished master's thesis]. Marmara Üniversitesi, İstanbul.

Kaya Aydın, M. (2022). Okul öncesi öğretmenlerinin çevre okuryazarlığı ile ekolojik vatandaşlık düzeyleri arasındaki ilişkinin incelenmesi. [Unpublished master's thesis]. Abant İzzet Baysal Üniversitesi, Bolu.

Metin, T. (2023). Eko-Okullar programının okul öncesi öğrencilerinin sorumlu davranma, çevresel farkındalık ve temel beceri düzeyleri üzerine etkisinin incelenmesi. [Unpublished master's thesis]. Afyon Kocatepe Üniversitesi.

Özer, M. (2023). Okul öncesi eğitimde ekolojik okuryazarlık becerisini geliştirmeye yönelik uygulamaların incelenmesi: Bir durum çalışması. [Unpublished doctoral dissertation]. Anadolu Üniversitesi, Eskişehir.

Özgeçen, Ö. (2023). Sınıf eğitimi ve okul öncesi eğitimi öğretmen adaylarının fen etkinliklerinde çevre eğitimi farkındalık durumlarının incelenmesi [Unpublished master's thesis]. Çanakkale Onsekiz Mart Üniversitesi.

Özgül, T. (2022). Çevre Okuryazarlığı Temsilleri: 48-72 aylık çocuklara yönelik resimli öykü kitaplarının içerik analizi. [Unpublished master's thesis]. Middle East Technical University, Ankara.

Özkan, B. (2017). Okul öncesi öğretmenlerinin çevre eğitimine yönelik görüşlerinin incelenmesi. Akademik Bakış Uluslararası Hakemli Sosyal Bilimler Dergisi, (62), 80-87.

Sarıbıyık, S. K. (2022). Okul öncesinde verilen çevre eğitiminin öğrenci davranışlarına etkisinin incelenmesi. Yüksek Lisans Tezi. Kastamonu Üniversitesi

Şahin, S. B. (2022). Okul öncesi dönemde çevre eğitimi alanında yapılan araştırmalara yönelik inceleme: meta-sentez çalışması. Yüksek Lisans Tezi, Kastamonu Üniversitesi).

Uğur, G. (2023). Okul öncesi öğretmenlerinin çevre eğitimi yeterliliklerine ilişkin bir araştırma. Yüksek Lisans Tezi. Siirt Üniversitesi, Siirt.

Uslucan, S. (2016). Okul öncesi dönemdeki çocukların (60-72 ay) çevreye yönelik tutumlarına çevre eğitim programının etkisi (Çanakkale il örneği). Çanakkale Onsekiz Mart Üniversitesi, Çanakkale.